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ARTICLES

Walter E. Williams	Affirmative Action Can't Be Mended
Carlos Seiglie	Deficits, Defense, and Income Redistribution
Gregory B. Christainsen	The Role of Forecasting in Meeting Inflation Targets: The Case of New Zealand
A. James Meigs	Mexican Monetary Lessons
Roberto Salinas-León	The Mexican Peso Crisis: Comment on Meigs
Sherrill Shaffer	Deposit Insurance Pricing: The Hidden Burden of Premium Rate Volatility
George Selgin	A Regulatory Placebo? or, The Strange Case of Dr. Kaufman and Mr. Seir
Enrique Ghersi	The Informal Economy in Latin America

BOOK REVIEWS

Richard E. Messick • James V. DeLong • John Pickering

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ARTICLES

Walter E. Williams
Affirmative Action Can't Be Mended 1

Carlos Seiglie
Deficits, Defense, and Income Redistribution 11

Gregory B. Christainsen
The Role of Forecasting in Meeting Inflation Targets: The Case of New Zealand 23

A. James Meigs
Mexican Monetary Lessons 35

Roberto Salinas-León
The Mexican Peso Crisis: Comment on Meigs 73

Sherrill Shaffer
Deposit Insurance Pricing: The Hidden Burden of Premium Rate Volatility 81

George Selgin
A Regulatory Placebo? or, The Strange Case of Dr. Kaufman and Mr. Seir 91

Enrique Ghersi
The Informal Economy in Latin America 99

BOOK REVIEWS

Reputation: Studies in the Voluntary Elicitation of Good Conduct
Daniel B. Klein, ed.

Reviewed by Richard E. Messick 109

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ELECTRONIC REPRODUCTION PROHIBITED

Property Rights: Understanding Government Takings and Environmental Regulation
Nancie G. Marzulla and Roger J. Marzulla

Reviewed by James V. DeLong 112

Mere Creatures of the State? Education, Religion and the Courts: A View from the Courtroom
William Bentley Ball

Reviewed by John Pickering 114

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Affirmative Action Can't Be Mended

Walter E. Williams

For the last several decades, affirmative action has been the basic component of the civil rights agenda. But affirmative action, in the form of racial preferences, has worn out its political welcome. In Gallup Polls, between 1987 and 1990, people were asked if they agreed with the statement: "We should make every effort to improve the position of blacks and other minorities even if it means giving them preferential treatment." More than 70 percent of the respondents opposed preferential treatment while only 24 percent supported it. Among blacks, 66 percent opposed preferential treatment and 32 percent supported it (Lipset 1992: 66–69).

The rejection of racial preferences by the broad public and increasingly by the Supreme Court has been partially recognized by even supporters of affirmative action. While they have not forsaken their goals, they have begun to distance themselves from some of the language of affirmative action. Thus, many business, government, and university affirmative action offices have been renamed "equity offices." Racial preferences are increasingly referred to as "diversity multiculturalism." What is it about affirmative action that gives rise to its contentiousness?

For the most part, post-World War II America has supported civil rights for blacks. Indeed, if we stick to the uncorrupted concept of civil rights, we can safely say that the civil rights struggle for blacks is over and won. Civil rights properly refer to rights, held simultaneously among individuals, to be treated equally in the eyes of the law, make contracts, sue and be sued, give evidence, associate and travel freely, and vote. There was a time when blacks did not fully enjoy those rights. With the yeoman-like work of civil rights organizations and decent Americans, both black and white, who fought lengthy court,

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legislative, and street battles, civil rights have been successfully secured for blacks. No small part of that success was due to a morally compelling appeal to America's civil libertarian tradition of private property, rule of law, and limited government.

Today's corrupted vision of civil rights attacks that civil libertarian tradition. Principles of private property rights, rule of law, freedom of association, and limited government are greeted with contempt. As such, the agenda of today's civil rights organizations conceptually differs little from yesteryear's restrictions that were the targets of the earlier civil rights struggle. Yesteryear civil rights organizations fought *against* the use of race in hiring, access to public schools, and university admissions. Today, civil rights organizations fight *for* the use of race in hiring, access to public schools, and university admissions. Yesteryear, civil rights organizations fought *against* restricted association in the forms of racially segregated schools, libraries, and private organizations. Today, they fight *for* restricted associations. They use state power, not unlike the racists they fought, to enforce racial associations they deem desirable. They protest that blacks should be a certain percentage of a company's workforce or clientele, a certain percentage of a student body, and even a certain percentage of an advertiser's models.

Civil rights organizations, in their successful struggle against state-sanctioned segregation, have lost sight of what it means to be truly committed to liberty, especially the freedom of association. The true test of that commitment does not come when we allow people to be free to associate in ways we deem appropriate. The true test is when we allow people to form those voluntary associations we deem offensive. It is the same principle we apply to our commitment to free speech. What tests our commitment to free speech is our willingness to permit people the freedom to say things we find offensive.

Zero-Sum Games

The tragedy of America's civil rights movement is that it has substituted today's government-backed racial favoritism in the allocation of resources for yesterday's legal and extra-legal racial favoritism. In doing so, civil rights leaders fail to realize that government allocation of resources produces the kind of conflict that does not arise with market allocation of resources. Part of the reason is that any government allocation of resources, including racial preferential treatment, is a zero-sum game.

A zero-sum game is defined as any transaction where one person's gain necessarily results in another person's loss. The simplest example

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of a zero-sum game is poker. A winner's gain is matched precisely by the losses of one or more persons. In this respect, the only essential difference between affirmative action and poker is that in poker participation is voluntary. Another difference is the loser is readily identifiable, a point to which I will return later.

The University of California, Berkeley's affirmative action program for blacks captures the essence of a zero-sum game. Blacks are admitted with considerably lower average SAT scores (952) than the typical white (1232) and Asian student (1254) (Sowell 1993: 144). Between UCLA and UC Berkeley, more than 2,000 white and Asian straight A students are turned away in order to provide spaces for black and Hispanic students (Lynch 1989: 163). The admissions gains by blacks are exactly matched by admissions losses by white and Asian students. Thus, any preferential treatment program results in a zero-sum game almost by definition.

More generally, government allocation of resources is a zero-sum game primarily because government has no resources of its very own. When government gives some citizens food stamps, crop subsidies, or disaster relief payments, the recipients of the largesse gain. Losers are identified by asking: where does government acquire the resources to confer the largesse? In order for government to give to some citizens, it must through intimidation, threats, and coercion take from other citizens. Those who lose the rights to their earnings, to finance government largesse, are the losers.

Government-mandated racial preferential treatment programs produce a similar result. When government creates a special advantage for one ethnic group, it necessarily comes at the expense of other ethnic groups for whom government simultaneously creates a special disadvantage in the form of reduced alternatives. If a college or employer has X amount of positions, and R of them have been set aside for blacks or some other group, that necessarily means there are $(X - R)$ fewer positions for which other ethnic groups might compete. At a time when there were restrictions against blacks, that operated in favor of whites, those restrictions translated into a reduced opportunity set for blacks. It is a zero-sum game independent of the race or ethnicity of the winners and losers.

Our courts have a blind-sided vision of the zero-sum game. They have upheld discriminatory racial preferences in hiring but have resisted discriminatory racial preferences in job layoffs. An example is the U.S. Supreme Court's ruling in *Wygant v. Jackson Board of Education* (1986), where a teacher union's collective-bargaining agreement protected black teachers from job layoffs in order to maintain

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racial balance.[1] Subsequently, as a result of that agreement, the Jackson County School Board laid off white teachers having greater seniority while black teachers with less seniority were retained.

A lower court upheld the constitutionality of the collective bargaining agreement by finding that racial preferences in layoffs were a permissible means to remedy societal discrimination (*Wygant* 1982: 1195, 1201). White teachers petitioned the U.S. Supreme Court, claiming their constitutional rights under the Equal Protection clause were violated. The Court found in their favor. Justice Lewis F. Powell delivered the opinion saying, "While hiring goals impose a diffuse burden, only closing one of several opportunities, layoffs impose the entire burden of achieving racial equity on particular individuals, often resulting in serious disruption of their lives. The burden is too intrusive" (*Wygant* 1986: 283).

In *Wygant*, the Supreme Court recognized the illegitimacy of creating a special privilege for one citizen (a black teacher) that comes at the expense and disadvantage of another citizen (a white teacher).[2] However, the Court made a false distinction when it stated that "hiring goals impose a diffuse burden [while] . . . layoffs impose the entire burden . . . on particular individuals."

There is no conceptual distinction in the outcome of the zero-sum game whether it is played on the layoff or the hiring side of the labor market. If a company plans to lay off X amount of workers and decides that R of them will have their jobs protected because of race, that means the group of workers that may be laid off have $(X - R)$ fewer job retention opportunities. The diffuseness to which Justice Powell refers is not diffuseness at all. It is simply that the victims of hiring preferences are less visible than victims of layoff preferences as in the case of *Wygant*. The petitioners in *Wygant* were identifiable

[1]Article XII of the collective bargaining agreement stated:

> In the event that it becomes necessary to reduce the number of teachers through layoff from employment by the Board, teachers with the most seniority in the district shall be retained, except that at no time will there be a greater percentage of minority personnel laid off than the current percentage of minority personnel employed at the time of the layoff. In no event will the number given notice of possible layoff be greater than the number of positions to be eliminated. Each teacher so affected will be called back in reverse order for positions for which he is certificated maintaining the above minority balance.

[2]In a similar case, *Cunico v. Pueblo School District No. 60* (1990), the school district laid off a white social worker but did not lay off a more senior black social worker. The school district argued that it had to retain the black worker so as to maintain diversity on the workforce. That argument did not persuade the Tenth Circuit Court, which applied strict scrutiny and held the school district's actions as unconstitutional and ordered the rehiring of Connie Cunico.

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people who could not be covered up as "society." That differs from the cases of hiring and college admissions racial preferences where those who face a reduced opportunity set tend to be unidentifiable to the courts, other people, and even to themselves. Since they are invisible victims, the Supreme Court and others can blithely say racial hiring goals (and admission goals) impose a diffuse burden.

Tentative Victim Identification

In California, voters passed the California Civil Rights Initiative of 1996 (CCRI) that says: "The state shall not discriminate against, or grant preferential treatment to, any individual or group on the basis of race, sex, color, ethnicity, or national origin in the operation of public employment, public education, or public contracting." Therefore, California public universities can no longer have preferential admission policies that include race as a factor in deciding whom to admit. As a result, the UCLA School of Law reported accepting only 21 black applicants for its fall 1997 class—a drop of 80 percent from the previous year, in which 108 black applicants were accepted. At the UC Berkeley Boalt Hall School of Law, only 14 of the 792 students accepted for the fall 1997 class are black, down from 75 the previous year. At the UCLA School of Law, white enrollment increased by 14 percent for the fall 1997 term and Asian enrollment rose by 7 percent. At UC Berkeley, enrollment of white law students increased by 12 percent and Asian law students increased by 18 percent (Weiss 1997).

For illustrative purposes, let us pretend that CCRI had not been adopted and the UCLA School of Law accepted 108 black students as it had in 1996 and UC Berkeley accepted 75. That being the case, 83 more blacks would be accepted to UCLA Law School for the 1997–98 academic year and 61 more blacks would be accepted to UC Berkeley's Law School. Clearly, the preferential admissions program, at least in terms of being accepted to these law schools, benefits blacks. However, that benefit is not without costs. With preferential admission programs in place, both UCLA and UC Berkeley law schools would have had to turn away 144 white and Asian students, with higher academic credentials, in order to have room for black students.

In the case of UC Berkeley's preferential admissions for blacks, those whites and Asians who have significantly higher SAT scores and grades than the admitted blacks are victims of reverse discrimination. However, in the eyes of the courts, others, and possibly themselves, they are invisible victims. In other words, no one can tell for sure who among those turned away would have gained entry to UC Berkeley were it not for the preferential treatment given to blacks.

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The basic problem of zero-sum games (those of an involuntary nature) is that they are politically and socially unstable. In the case of UCLA and UC Berkeley, two of California's most prestigious universities, one would not expect parents to permanently tolerate seeing their children work hard to meet the university's admission standards only to be denied admission because of racial preference programs. Since the University of California is a taxpayer-subsidized system, one suspects that sooner or later parents and others would begin to register complaints and seek termination of racial preferences in admissions. That is precisely much of the political motivation behind Proposition 209.

Affirmative Action and Supply

An important focus of affirmative action is statistical underrepresentation of different racial and ethnic groups on college and university campuses. If the percentages of blacks and Mexican-Americans, for example, are not at a level deemed appropriate by a court, administrative agency, or university administrator, racial preference programs are instituted. The inference made from the underrepresentation argument is that, in the absence of racial discrimination, groups would be represented on college campuses in proportion to their numbers in the relevant population. In making that argument, little attention is paid to the supply issue—that is, to the pool of students available that meet the standards or qualifications of the university in question.

In 1985, fewer than 1,032 blacks scored 600 and above on the verbal portion of the SAT and 1,907 scored 600 and above on the quantitative portion of the examination. There are roughly 58 elite colleges and universities with student body average composite SAT scores of 1200 and above (Sowell 1993: 142). If blacks scoring 600 or higher on the quantitative portion of the SAT (assuming their performance on the verbal portion of the examination gave them a composite SAT score of 1200 or higher) were recruited to elite colleges and universities, there would be less than 33 black students available per university. At none of those universities would blacks be represented according to their numbers in the population.

There is no evidence that suggests that university admissions offices practice racial discrimination by turning away blacks with SAT scores of 1200 or higher. In reality, there are not enough blacks to be admitted to leading colleges and universities on the same terms as other students, such that their numbers in the campus population bear any resemblance to their numbers in the general population.

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Attempts by affirmative action programs to increase the percent of blacks admitted to top schools, regardless of whether blacks match the academic characteristics of the general student body, often produce disastrous results. In order to meet affirmative action guidelines, leading colleges and universities recruit and admit black students whose academic qualifications are well below the norm for other students. For example, of the 317 black students admitted to UC Berkeley in 1985, all were admitted under affirmative action criteria rather than academic qualifications. Those students had an average SAT score of 952 compared to the national average of 900 among all students. However, their SAT scores were well below UC Berkeley's average of nearly 1200. More than 70 percent of the black students failed to graduate from UC Berkeley (Sowell 1993: 144).

Not far from UC Berkeley is San Jose State University, not one of the top-tier colleges, but nonetheless respectable. More than 70 percent of its black students fail to graduate. The black students who might have been successful at San Jose State University have been recruited to UC Berkeley and elsewhere where they have been made artificial failures. This pattern is one of the consequences of trying to use racial preferences to make a student body reflect the relative importance of different ethnic groups in the general population. There is a mismatch between black student qualifications and those of other students when the wrong students are recruited to the wrong universities.

There is no question that preferential admissions is unjust to both white and Asian students who may be qualified but are turned away to make room for less-qualified students in the "right" ethnic group. However, viewed from a solely black self-interest point of view, the question should be asked whether such affirmative action programs serve the best interests of blacks. Is there such an abundance of black students who score above the national average on the SAT, such as those admitted to UC Berkeley, that blacks as a group can afford to have those students turned into artificial failures in the name of diversity, multiculturalism, or racial justice? The affirmative action debate needs to go beyond simply an issue of whether blacks are benefited at the expense of whites. Whites and Asians who are turned away to accommodate blacks are still better off than the blacks who were admitted. After all, graduating from the university of one's second choice is preferable to flunking out of the university of one's first choice.

To the extent racial preferences in admission produce an academic mismatch of students, the critics of California's Proposition 209 may be unnecessarily alarmed, assuming their concern is with black students actually graduating from college. If black students, who score 952 on

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the SAT, are not admitted to UC Berkeley, that does not mean that they cannot gain admittance to one of America's 3,000 other colleges. It means that they will gain admittance to some other college where their academic characteristics will be more similar to those of their peers. There will not be as much of an academic mismatch. To the extent this is true, we may see an *increase* in black graduation rates. Moreover, if black students find themselves more similar to their white peers in terms of college grades and graduation honors, they are less likely to feel academically isolated and harbor feelings of low self-esteem.

Affirmative Action and Justice

Aside from any other question, we might ask what case can be made for the morality or justice of turning away more highly credentialed white and Asian students so as to be able to admit more blacks? Clearly, blacks as a group have suffered past injustices, including discrimination in college and university admissions. However, that fact does not spontaneously yield sensible policy proposals for today. The fact is that a special privilege cannot be created for one person without creating a special disadvantage for another. In the case of preferential admissions at UCLA and UC Berkeley, a special privilege for black students translates into a special disadvantage for white and Asian students. Thus, we must ask what have those individual white and Asian students done to deserve punishment? Were they at all responsible for the injustices, either in the past or present, suffered by blacks? If, as so often is the case, the justification for preferential treatment is to redress past grievances, how just is it to have a policy where a black of today is helped by punishing a white of today for what a white of yesterday did to a black of yesterday? Such an idea becomes even more questionable in light of the fact that so many whites and Asians cannot trace the American part of their ancestry back as much as two or three generations.

Affirmative Action and Racial Resentment

In addition to the injustices that are a result of preferential treatment, such treatment has given rise to racial resentment where it otherwise might not exist. While few people support racial resentment and its manifestations, if one sees some of affirmative action's flagrant attacks on fairness and equality before the law, one can readily understand why resentment is on the rise.

In the summer of 1995, the Federal Aviation Administration (FAA) published a "diversity handbook" that said, "The merit promotion

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process is but one means of filling vacancies, which need not be utilized if it will not promote your diversity goals." In that spirit, one FAA job announcement said, "Applicants who meet the qualification requirements . . . cannot be considered for this position. . . . Only those applicants who do not meet the Office of Personnel Management requirements . . . will be eligible to compete" (Roberts and Stratton 1995: 141).

According to a General Accounting Office report that evaluated complaints of discrimination by Asian-Americans, prestigious universities such as UCLA, UC Berkeley, MIT, and the University of Wisconsin have engaged in systematic discrimination in the failure to admit highly qualified Asian students in order to admit relatively unqualified black and Hispanic students (U.S. GAO 1995).

In Memphis, Tennessee, a white police officer ranked 59th out of 209 applicants for 75 available positions as police sergeant, but he did not get promoted. Black officers, with lower overall test scores than he, were moved ahead of him and promoted to sergeant. Over a two-year period, 43 candidates with lower scores were moved ahead of him and made sergeant (Eastland 1996: 1–2).

There is little need to recite the litany of racial preference instances that are clear violations of commonly agreed upon standards of justice and fair play. But the dangers of racial preferences go beyond matters of justice and fair play. They lead to increased group polarization ranging from political backlash to mob violence and civil war as seen in other countries. The difference between the United States and those countries is that racial preferences have not produced the same level of violence (Sowell 1990). However, they have produced polarization and resentment.

Affirmative action proponents cling to the notion that racial discrimination satisfactorily explains black/white socioeconomic differences. While every vestige of racial discrimination has not been eliminated in our society, current social discrimination cannot begin to explain all that affirmative action proponents purport it explains. Rather than focusing our attention on discrimination, a higher payoff can be realized by focusing on real factors such as fraudulent education, family disintegration, and hostile economic climates in black neighborhoods. Even if affirmative action was not a violation of justice and fair play, was not a zero-sum game, was not racially polarizing, it is a poor cover-up for the real work that needs to be done.

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Deficits, Defense, and Income Redistribution

Carlos Seiglie

By now there is a substantial literature in economics pioneered by George Stigler (1971) and refined by Sam Peltzman (1976) and Gary Becker (1985) that analyzes the role the state plays in redistributing wealth across different groups in society. This transfer of wealth can be effectuated implicitly by government laws and regulations or by direct taxation and the redistribution of the revenues to different groups (Meltzer and Richard 1981). The key feature of models in this literature is that the redistribution is implicitly assumed to occur repeatedly across the same groups at a given moment in time but not between different groups over time. These static models of government behavior contrast with macroeconomic models that view government policy from a normative prospective and analyze it within a dynamic framework. For example, Robert Barro (1979) assumes that the state chooses a tax path subject to the constraint that individual taxpayers seek to maximize their intertemporal utility.

With notable exceptions, the public choice literature has not focused on the possibilities available to the state to transfer wealth intertemporally across groups, nor has the macroeconomics literature. The question of whether deficit financing of government expenditures has an impact on the real economy is a case in point. If deficits do affect real variables, then budget deficits can be used by government to redistribute wealth across different generations. Conversely, changes in institutional structures, laws, or regulations intended to transfer income across groups to increase political support may lead to income transfers across generations. This paper examines whether the enfranchisement of blacks in the United States, who have relatively low incomes, has led to increased use of debt to finance government spending.

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A model by Alex Cukierman and Allan Meltzer (1989) allows us to bridge the gap between income transfers across groups and across generations. It generalizes Barro's (1974) overlapping generations model with bequest to account for differences in abilities and wealth among individuals. This heterogeneity in endowments permits for some individuals in society to be bequest constrained while others are not. By introducing the political structure of a representative democracy to derive collective choices, Cukierman and Meltzer show that it is possible for debt neutrality not to hold—that is, for fiscal deficits to have real effects on the economy. A more neglected implication of their model is that debt will be larger the greater the spread of the wealth distribution across individuals. That implication, which is the focus of attention in this paper, has an interesting corollary, namely, the likelihood that deficits increase with an extension of the franchise to low-wealth individuals who are likely to be bequest constrained.[1] More generally, if we do not live in a Ricardian world, then deficits can be used by individuals as an institutional vehicle for the redistribution of wealth across generations.

This paper presents some empirical evidence favorable to the proposition that fiscal deficits will be greater the more unequal the distribution of income and the greater the number of individuals who are at the lower tail of that distribution. It emphasizes that, if feasible, the forces that lead the state to redistribute income across different groups at any moment in time will also lead it to transfer wealth across generations through debt financing of expenditures. I will argue that the latter type of redistribution has been made possible in the United States since the mid-1960s by three factors: (1) an increase in the political participation of blacks, a previously disenfranchised low-income group, through legislation that reduced the cost to them of participating in the electoral process; (2) a period of very rapid economic expansion; and (3) changes in the political structure that are consistent with an increase in the degree of influence of subsidized groups (or a fall in the influence of taxed groups). Although I emphasize the redistributive aspect of deficits, this paper can be viewed as complementing the literature that emphasizes the impact that other income redistribution policies have had on the expansion of the public sector (e.g., see Becker 1985 and Peltzman 1980).

[1]Another corollary is that the likelihood of deficits increases with an increase in the expected rate of economic growth. The reason for this is that the desired amount bequeathed to one's offspring is inversely related to their expected wage. Therefore, higher expected opportunities for one's descendants lowers the desired amount to bequeath.

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Framework for Analysis

This paper examines the impact of U.S. income transfer programs and defense spending on federal budget deficits, as measured by real deficits per capita and deficits as a percent of GNP. Deficits per capita can be viewed as the increment to tax liabilities imposed on the average member of a future generation if the bequest motive is not operative—that is, if all families are bequest constrained and if population growth is equal to the interest rate on the debt. At the other extreme when Ricardian equivalence holds, deficits per capita can be viewed as the average size of the bequest each individual of the current generation must leave annually for future generations. Similarly, deficits as a percentage of GNP can represent the average tax rate on future generations if bequests are not operative or, when they are fully operative, the average size of the bequest rate of the current generation. In effect, deficits as a percentage of GNP establish the bounds on the lump-sum average tax or bequest rate required to finance (or offset) the deficit when population growth is equal to the interest rate on the debt. The real effects caused by deficit financing would have to be factored in to establish the full cost to future generations or the total transfer required of the current generation to leave future generations no worse off.

If deficits provide a vehicle for the intergenerational redistribution of wealth, then we should expect that both the increment to average tax liabilities and the average tax rate on future generations should be positively related with other "tax rates" that are being levied to transfer income. In effect, when the current generation votes to redistribute income from some of their members to others of the same generation by increasing taxes, they will also seek to expand the tax base by relying on the wealth of future generations and increase the size of the deficit. In other words, *redistribution across groups and across generations should be positively correlated.*

On the other hand, if Ricardian equivalence holds then rational individuals know that deficit financing is an ineffective tool for achieving the desired intergenerational transfer of wealth and therefore, they must resort to taxing the wealth of the current generation since that is the only feasible tax base. Consequently, no correlation should be found between the average tax rate on the wealth of current taxpayers and deficit as a percentage of GNP, which in this case is the rate of intergenerational bequest. More generally, we should find that deficits are not positively related to the redistribution sentiment of voters. In order to empirically test the nature of this relation in the United States, I use federal social welfare expenditures—expressed in

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per capita terms and as a percentage of GNP—as a measure of the average tax rate on individuals for the purpose of transferring income and as a proxy for the degree of redistribution sentiment of voters.

As discussed above, the likelihood that deficits are an effective vehicle for transferring wealth increases with the extension of the franchise to low-wealth individuals. Such a change occurred in the mid-1960s, in particular with the passage of the Civil Rights Act of 1964 and the Voting Rights Bill of 1965 that reduced institutional obstacles hindering the participation of blacks in the electoral process.[2] Thus, after 1965, the likelihood that deficits and expenditures on transfer programs are positively correlated should increase.

The mid-1960s marked two other relevant developments. First, the emergence of a series of redistribution programs directed toward domestic groups (President Lyndon Johnson's Great Society programs) as well as programs directly solely toward foreigners (e.g., the Peace Corps, the Alliance for Progress, and Food for Peace).[3] Second, the existence of a long economic expansion that acted as a catalyst for larger debt, as shown by Cukierman and Meltzer (1989). It should be pointed out that Peltzman's (1980) paper, which argued that economic equality spurs the growth of the redistributive state, provides a foundation for linking economic growth, income inequality, and deficit financing. Using his framework, one would expect that economic expansions thought to reduce income inequality and Civil Rights legislation that raises expectations of economic opportunities should lead to greater deficits if bequests are not fully operative and the optimum tax rate is constant.

Finally, Barro (1979) argues that wars are optimally financed by the issuing of debt. But even in times of peace, defense spending may not be financed by taxes on the current generation, and the debt may not be fully offset by bequest, if that spending is viewed by the current generation as serving to increase the likelihood that future generations may be able to consume the wealth bequeathed (Seiglie 1998). In other words, if defense spending serves to deter an attack that would destroy a fraction of the capital stock expected to be bequeathed to future generations, then, as in the case of bequest of human capital, deficits will not be fully offset. Therefore, the other explanatory variable is military spending per capita and as a share of

[2]Blacks as a group have much lower wealth than the national average. Francine Blau and John Graham (1990) estimate that the wealth of black families is only 18 percent of white families.

[3]Whether those transfer programs came about because of a shift in the median voter to one with lower wages or because of an overall change in the preferences (ideology) of a significant fraction of the electorate is unclear.

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GNP. The complete set of variables and their definitions are summarized in Table 1.

Results

Table 2 presents the regression results for deficits per capita and as a percentage of GNP, as well as for the growth rate of this latter variable.[4] As expected, the coefficients for defense spending per capita and as a percentage of GNP, both of which may be viewed as proxies for taxes imposed on the current generation for the purpose of maintaining national security, are positive and statistically significant. This result is consistent with the notion that defense may be viewed by the current generation as a form of insuring the transferability of the capital stock to future generations. Therefore, defense spending is not fully offset by taxes on the current generation but instead is partly financed by additional debt.[5]

If, as expected, enfranchisement of a low-wealth group increases the likelihood that deficits provide a mechanism for redistributing wealth across generations or, equivalently, that future generations' wealth holdings are a taxable base from the viewpoint of the current generation, then the coefficient of *Redistribution* should be positive. In fact, in all three cases, it is positive and statistically significant at the 5 percent level, indicating that after 1964 the "potential" tax burden on future generations and the growth rate of that burden increase with the sentiment to redistribute across groups of the current generation.[6] Yet prior to 1964, this phenomenon seems not to have been important as can be seen by the statistical insignificance of the coefficients of SW/GNP and %ΔSW/GNP. Note also that all the coefficients are negative for the earlier period and statistically significant at the 10 percent level for the case of deficits per capita. This result is further highlighted in Table 3, which presents the results of regressing the separate components of social welfare expenditures on our deficit variables.

During the earlier period, the coefficients of the Social Security and public aid components of social welfare expenditures are negative and not statistically significant. Whereas, after the mid-1960s, the coefficients are positive and statistically significant at the 10 percent

[4]Evan Tanner and Peter Liu (1994) find that the deficit for the United States is stationary when a structural break is included and that interest-inclusive expenditures and revenues are cointegrated (Engle and Granger 1987).

[5]The theoretical argument along with empirical evidence from other countries can be found in Seiglie (1998).

[6]A Chow test suggests a breakpoint somewhere between 1962 and 1967.

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TABLE 1

SYMBOLS AND DEFINITIONS

Variable	Definition
Deficit/PC	Annual federal deficit (surplus) per capita in constant dollars
Deficit/GNP	Federal deficit (surplus) as a percentage of GNP
%ΔDeficit/GNP	Annual percentage change of Deficit/GNP
SW/PC	Annual federal social welfare expenditures per capita in constant dollars
SW/GNP	Federal social welfare expenditures as a percentage of GNP
%ΔSW/GNP	Annual percentage change of SW/GNP
Defense/PC	Defense spending per capita in constant dollars
Defense/GNP	Defense spending as a percentage of GNP
%ΔDefense/GNP	Annual percentage change of Defense/GNP
SS&PA/PC	Real annual spending per capita on the Social Security and public aid components of social welfare expenditures
SS&PA/GNP	Expenditures on the Social Security and public aid component as a percent of GNP
Education/PC	Real annual spending per capita on the education component of social welfare expenditures
Education/GNP	Expenditures on the education component as a percent of GNP
Health/PC	Real annual spending per capita on the health component of social welfare expenditures
Health/GNP	Expenditures on the health component as a percent of GNP
D_t	Dummy variable defined as having a value of zero before 1964 and one thereafter
Redistribution	Captures structural shift of the slope of the income transfer variables after enfranchisement and is defined as (D_t*SW/PC), (D_t*SW/GNP), (D_t*%ΔSW/GNP), (D_t*SS&PA/PC), and (D_t*SS&PA/GNP), respectively

NOTES: Data for social welfare expenditures are from U.S. Social Security Administration, *Social Security Bulletin* and *Statistical Abstract of the United States* (various years). Data for other variables are from the *Economic Report of the President* (various years). Constant dollar values were derived by using the implicit GNP price deflator (1982 = 100).

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TABLE 2

RESULTS OF REGRESSING REAL DEFICITS PER CAPITA, DEFICITS AS A PERCENTAGE OF GNP, AND THE ANNUAL RATE OF CHANGE OF THE SHARE OF THE DEFICIT IN GNP ON SELECTED VARIABLES FOR THE UNITED STATES, 1939–1989

Independent Variables	Dependent Variable		
	Deficit/PC	Deficit/GNP	%ΔDeficit/GNP
Constant	−.678 (.297)	−.005 (.141)	1.10 (2.09)
SW/PC	−.997 (1.73)		
SW/GNP		−1.01 (1.26)	
%ΔSW/GNP			−2.77 (.757)
Defense/PC	.635 (12.11)		
Defense/GNP		.62 (8.81)	
%ΔDefense/GNP			−.390 (.597)
Redistribution	1.51 (2.51)	1.93 (2.29)	32.76 (3.00)
Intercept Dummy (D_t)	−7.75 (2.81)	−.096 (2.29)	−1.28 (1.69)
ρ	.281 (1.96)	.296 (2.20)	
Adjusted R^2	.88	.87	.10
Mean of Dependent Variable	3.68	.033	.80

NOTES: The t-ratios are shown in parentheses below coefficients. The Durbin-Watson statistic was low for the first two regressions indicating the possibility of serial correlation and was corrected using an AR(1) specification.

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TABLE 3

RESULTS OF REGRESSING REAL DEFICITS PER CAPITA AND DEFICITS AS A PERCENTAGE OF GNP ON COMPONENTS OF SOCIAL WELFARE EXPENDITURES FOR THE UNITED STATES, 1939–1989

Independent Variables	Dependent Variable	
	Deficit/PC	Deficit/GNP
Constant	−4.15 (2.84)	−.067 (4.72)
SS&PA/PC	−.741 (1.21)	
SS&PA/GNP		−.288 (.553)
Education/PC	−3.47 (.879)	
Education/GNP		−3.28 (.810)
Health/PC	8.14 (2.72)	
Health/GNP		9.52 (4.28)
Defense/PC	.552 (9.12)	
Defense/GNP		.594 (12.3)
Redistribution	1.12 (1.77)	1.09 (1.87)
Intercept Dummy (D_t)	−3.79 (1.30)	−.034 (1.12)
ρ	.263 (1.90)	.060 (.44)
Adjusted R^2	.90	.90

NOTE: The t-ratios are shown in parentheses below coefficients.

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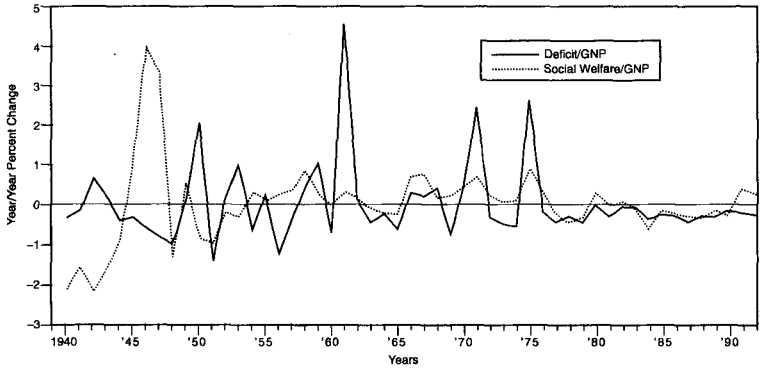
level.[7] This is indicated by the results for the variable *Redistribution*. As expected, the results for defense spending are positive and significant at the 5 percent level for both regressions.

Allen Drazen (1978) argues that bequest in the form of human capital may lead to Ricardian equivalence no longer holding. This implies that parents who bequeath human capital would prefer the government to finance these expenditures with debt. Therefore, we include the education and health components of social welfare expenditures separately without accounting for a structural break to test this proposition. During the sample period, spending on health is positively related to deficits in both regressions as well as statistically significant. We would expect this result if parents perceive increases in this form of human capital to be a bequest to future generations. Similar results are not found for federal educational outlays. This is not surprising given that a large proportion of public spending on education occurs at the state and municipal levels and not at the federal level.

Figure 1 depicts how after the mid-1960s political pressure to redistribute among the current generation, %ΔSW/GNP, is positively correlated with pressure to redistribute across generations, as measured by the percentage changes in the potential average tax rate, %ΔDeficit/GNP. It has to be emphasized that the political feasibility to redistribute across generations seems not to have been present prior to the mid-1960s, but becomes possible after that period—a

FIGURE 1

RELATION BETWEEN REDISTRIBUTION ACROSS GROUPS AND ACROSS GENERATIONS



[7]A further breakdown into Social Security and public aid spending reveals that the impact of Social Security is dominant.

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period in which blacks, who are disproportionately represented in the lower tail of the wealth distribution, gained access to the levers of political power.

Finally, we note that the coefficient for the intercept dummy, D_t, is negative and statistically significant for almost all the regressions. Thus, it seems that although the use of deficit financing for the purpose of wealth redistribution increased after the mid-1960s, the average size of the deficit either in per capita terms or as a percentage of GNP declined after that period (although the 1980s seem to reflect a reversal). This may be reflecting the fact that the earlier years comprised two major wars whose impact on the behavior of deficits is not being fully captured by the military expenditure variables.

Conclusion

During the mid-1960s, a structural shift in the behavior of U.S. budget deficits appears to have occurred. That shift is consistent with the proposition that, if economically feasible, the political forces that redistribute income across groups will also redistribute wealth across generations by increasing debt. The paper also argues that defense spending should be positively related to deficits, because that component of government spending ensures the transferability of bequests. The empirical evidence supports those propositions.

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The Role of Forecasting in Meeting Inflation Targets: The Case of New Zealand

Gregory B. Christainsen

The Reserve Bank of New Zealand Act of 1989 was a landmark piece of legislation which has attracted attention from monetary policymakers worldwide. The act states that the sole macroeconomic objective of the central bank is to achieve and maintain "stability in the general level of prices." Price-level stability is defined in a Policy Targets Agreement (PTA) signed by the minister of finance and the governor of the Reserve Bank. Given the long and variable lags between changes in monetary policy and changes in the rate of inflation, the Reserve Bank's economic forecasts play a crucial role in its decisionmaking and in determining whether stability in the general level of prices can be achieved.

This paper begins by discussing the rationale for elevating price-level stability to an exalted place in the making of monetary policy. It then examines the major criticisms directed at a New Zealand-type system and the responses of New Zealand policymakers to those criticisms. Next, the paper describes the Reserve Bank's forecasting methods and evaluates the bank's forecasting performance. While acknowledging that forecasting is an imprecise science, the paper concludes that the Reserve Bank's record has been good enough to inspire confidence in its ability to achieve, or at least approximate, price-level stability. The paper also offers some comments on the future of inflation targets in the formulation of monetary policy.

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Price-Level Stability as a Central Bank's Sole Macroeconomic Objective

The Reserve Bank of New Zealand Act of 1989 followed in the wake of the literature on the Phillips Curve that was published in the late 1960s and 1970s. The dominant theme of that literature was that no long-run tradeoff exists between the rate of inflation and the rate of unemployment.[1] If there is no long-run tradeoff, the most important issues for monetary policy are (1) the optimal rate of inflation, from the standpoint of welfare economics, and (2) the rate of inflation most consistent with a rise in long-term living standards.

With regard to the first issue, Milton Friedman (1969) has argued that the optimal long-run inflation rate is negative—that is, a mild deflation would be required to make the real return on cash balances equal to the real rate of return on other assets. With regard to the second issue, Martin Feldstein (1996) has argued that, since the tax system is not fully indexed, an inflation rate of zero (i.e., perfect price-level stability) is desirable to minimize distortions in saving and investment decisions. He calculated that even small departures from price-level stability have significant consequences for long-run living standards.

A policy that seeks to achieve and maintain price-level stability has some possible drawbacks as well. There is the possibility that the long-run rate of unemployment is inversely related to the inflation rate. In an important paper based on New Zealand data, Simon Chapple (1996) reiterated the view of Akerlof, Dickens, and Perry (1996) that nominal wages are downwardly rigid; a positive inflation rate is then seen as desirable to reduce real wages in some sectors and bring wages closer to equilibrium levels. It is argued that the average unemployment rate can thereby be lowered.

Chapple concluded that, if anything, labor costs in New Zealand are more rigid than those in the United States. On the other hand, Donald Brash, the governor of the Reserve Bank, argues that, although standard-time nominal wage rates may indeed be downwardly rigid, there are other means by which labor costs can be reduced. For example, premium rates of pay for overtime work can be cut or eliminated. Labor costs can also be cut as workers change jobs, because jobs can be redefined, and departing workers can be replaced by new hires who are often less expensive (Brash 1994).

[1]In 1958, A.W. Phillips, a New Zealander, observed an inverse relation between the unemployment rate and the rate of nominal wage inflation (not price inflation).

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Even if labor markets would eventually equilibrate in the absence of inflation, it is arguable that a stimulative—and perhaps even inflationary—monetary policy is sometimes desirable to speed the adjustment to higher levels of employment. However, it has been the view of New Zealand policymakers that if there is a severe negative shock to the total spending on goods and services, such as an abrupt fall in the foreign demand for New Zealand products, the aggregate demand for goods and services should be maintained via fiscal policy rather than monetary policy. Apart from any likelihood that fiscal policy acts more quickly than monetary policy, a countercyclical use of fiscal policy would tend to stabilize interest rates whereas the use of monetary policy would amplify the interest-rate impact of the initial shock.

Another concern about a policy that stresses price-level stability involves shocks to the aggregate supply of goods and services. Such shocks tend at least temporarily to increase the general level of prices and to depress production. If aggregate demand were then restrained via either monetary or fiscal policy in an attempt to stabilize the price level, the initial decline in production would be aggravated. The Policy Targets Agreement, to which the Reserve Bank's governor has committed himself, therefore contains "caveats" whereby the adverse impact of severe supply shocks on the "headline" rate of inflation may be disregarded unless it threatens to have long-lasting effects on the rate at which prices rise. The bank thus targets the "underlying" rate of inflation rather than the "headline" rate. (A copy of the most recent PTA has been included as an Appendix to this paper.)

In the absence of supply shocks, the official Consumer Price Index is still widely thought to overstate the true inflation rate by at least 1 percentage point, so the Reserve Bank has aimed at an annual inflation rate that is slightly positive as officially measured. It is understood that this target is unlikely to be hit very precisely. Early on, the PTA required the bank to keep the underlying inflation rate in a 0–2 percent band, as measured by the increase in the price level during the 12 months to the end of each quarter. After a change in government in 1996, a new agreement was reached whereby the bank is required to maintain a 0–3 percent band. The governor of the bank may be removed if the underlying inflation rate moves outside the band.

A final criticism of this kind of system—the criticism to which the heart of this paper is addressed—is that the Reserve Bank, however well-intentioned its staff may be, will simply be unable to accomplish its mission. As Friedman (1960: 87–89) noted,

> There is much evidence that monetary changes have their effect only after a considerable lag and over a long period and that the lag is rather variable. . . . In the present state of our knowledge, it

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> is hard enough to conceive of an effective trial-and-error procedure for adapting to price level movements. . . . A satisfactory policy guide or rule should be connected more directly with the means available to the monetary authority than is the price level. . . . The stock of money therefore seems to me the relevant magnitude in terms of which to formulate monetary rules and the behavior of which should be a criterion of policy performance.

Thus, Friedman thought that a policy rule expressed in terms of the quantity of money would have practical advantages over a rule expressed in terms of the price level or the inflation rate. However, instability in the demand for New Zealand dollars has resulted in a situation where the connection between the New Zealand money supply, however measured, and the price level has been quite loose (Wong and Grimes 1990).

The Reserve Bank of New Zealand's Forecasting Methods

The Reserve Bank estimates that the lag between a change in monetary policy and the consequent change in the rate of inflation is 6–18 months or even longer. Policy, therefore, cannot simply respond to the current rate of inflation. A firming of monetary conditions, in response to an observed increase in the inflation rate, would occur too late to prevent a continued acceleration in the price level for at least the following half year. Hence, the Reserve Bank must try to anticipate price-level changes and, ideally, be able to forecast the situation at least 18 months ahead.

The bank undertakes an official forecast of the rate of inflation and related variables once per quarter. Forecasts are made of the 12-month inflation rate to be expected at the end of the current quarter and at the end of each subsequent quarter for the following three years. The process begins with an evaluation of previous forecasts. Forecast errors are tabulated and possible explanations for the errors are assessed. A large error may call into question previous forecasting methods. Once previous forecasts have been evaluated, a new forecast can be undertaken. The new forecast, in turn, depends on policy assumptions and assumptions about other variables assumed to be exogenous (e.g., foreign GDP growth and the growth rate of potential domestic output).

Assumptions regarding interest rates are dominated by the degree of monetary tightness that the Reserve Bank wishes to uphold during the forecast period. The trade-weighted exchange rate is, on the other hand, simply assumed to remain constant during the forecast period. Assumptions regarding fiscal policy are based on the projections of

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the New Zealand Treasury and adjusted to reflect differences between the bank's outlook for the macroeconomy and the Treasury's.

Inflation forecasts up to two quarters ahead are made largely on a "components" basis. The Consumer Price Index is disaggregated into about 40 parts. Forecasts are prepared for each part and then weighted to forecast the quarterly percentage change in the aggregate. Statistics New Zealand, a government agency, provides monthly data on items such as retail sales, food prices, merchandise trade, wages and salaries, and employment. The Reserve Bank itself conducts surveys and sends staff to a few dozen major firms in metropolitan areas to determine the extent of economic activity and inflationary pressures. The surveys and on-site visits are thought to be especially helpful in identifying turning points in business behavior.

Because many markets may be in disequilibrium during a 0–2 quarter period, the bank has not relied on a structural equation for the core inflation rate in making its short-term forecasts. On a medium- to long-term basis, however, markets are assumed to approach equilibrium, and the Reserve Bank estimates the parameters of a structural equation. That equation views the underlying rate of inflation as being influenced by wage movements, productivity, the foreign prices of tradeable goods, the exchange rate, and excess demand pressures.

The bank has not relied on a full-blown macroeconomic model in making its forecasts. Rather, the bank's forecasts rely on a variety of sources, including prior staff beliefs, single-equation estimates, and the properties of other models. The bank's economics department has recently been building a more elaborate model to assist it in making forecasts, but a good deal of judgment is still exercised. For example, the model might be able to estimate the average impact of a change in real economic activity on the underlying inflation rate, but surveys might suggest that the actual impact is likely to be either above or below the average.

The Inflation Forecasting Record of the Reserve Bank of New Zealand[2]

The original Policy Targets Agreement that followed the passage of the Reserve Bank Act gave the bank until the end of 1992 to achieve an inflation rate of 0–2 percent. After the National Party unseated the Labour Party in the 1990 elections, the PTA was changed

[2]The Reserve Bank of New Zealand's projections and basic macroeconomic statistics can be found in two semiannual publications: *Economic Projections* and *Monetary Policy Statement*. The former is published in March and September of each year. (It used to be called *Economic Forecasts*.) The latter is published in June and December.

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to give the bank until the end of 1993 to hit the inflation target. An inflation rate of less than two percent was, in fact, achieved during 1992. However, the disinflation involved caused a significant recession. The bank subsequently eased monetary policy, but no breach of the inflation target was initially forecast. Indeed, if the bank expects inflationary pressures to accumulate, it is obligated to adopt a more restrictive policy.

The underlying inflation rate did ultimately rise above 2 percent, but the bank did not forecast that result until June 1995, near the end of the quarter when the 12-month underlying inflation rate actually breached the target range. The target range was also breached in the 12 months to June 1996 and also in the 12 months to September and December, respectively, in 1996.

The most difficult time for the formulation of monetary policy was the 1994–95 period. As the economy recovered from the deep recession, and in the wake of numerous economic reforms undertaken in addition to the Reserve Bank Act of 1989, no one could be sure at what rate the economy could grow in the absence of inflation. Of particular note was the 1991 Employment Contracts Act (ECA), which eliminated legal privileges that had been enjoyed by trade unions. As the growth of nominal wages was subdued after 1991, the Reserve Bank had to judge the extent to which that moderation reflected an adjustment to the ECA as opposed to an absence of inflationary pressures.

In the four quarters to March 1994 real gross domestic product increased 6.2 percent, but nominal wage growth continued to moderate. Many people were still not sure if a significant rise in the inflation rate was occurring. What finally prompted the Reserve Bank again to tighten monetary conditions was an upsurge in real estate prices, particularly in the Auckland area. To its credit, the Reserve Bank did tighten conditions before the underlying inflation rate showed an increase. The interest rate on 90-day commercial bank bills rose to more than 10 percent. From the first quarter of 1994 to the first quarter of 1996, the New Zealand dollar appreciated by 15 percent on a trade-weighted basis.

In its March 1994 *Economic Forecasts*, the Reserve Bank projected that the underlying inflation rate in the 12 months to March 1995 would be only 0.6 percent. However, the actual underlying rate was 1.9 percent. For the 12 months to June 1995 the same document forecast that the underlying rate would be 0.9 percent, but the actual underlying rate for the period was 2.2 percent—a breach of the 0–2 percent target range.

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Each of the above forecast errors was thus 1.3 percentage points. Those errors have been the largest ones experienced since the Reserve Bank began to target the underlying inflation rate. The bank itself has been quite humble about its ability to forecast inflation. However, if one considers all of the forecasts for the 1992–96 period, the average absolute error was only 0.4 percentage points. That average includes all forecasts of the underlying rate from 0–12 quarters ahead.

If one's attention is restricted to forecasts of the underlying inflation rate six quarters ahead, the average absolute error was 0.5 percentage points. Since a six-quarter lag is probably long enough for monetary policy to have had most of its impact on inflation, this result seems quite encouraging. Table 1 compares Reserve Bank of New Zealand inflation forecasts six quarters ahead with the ensuing reality.

To be sure, the bank's forecasting ability has not been sufficient to prevent a few breaches of the inflation target, but the largest breach has been only 0.3 percentage points. This occurred when the underlying inflation rate reached 2.3 percent at a time when the Policy Targets

TABLE 1

RESERVE BANK OF NEW ZEALAND INFLATION FORECASTS VERSUS ACTUAL INFLATION, 1992–1996[a]

Date of Forecast	Forecast of Underlying Inflation Six Quarters Ahead (%)	Actual Underlying Inflation Rate Six Quarters Later (%)	Forecast Error (% pts.)
Feb. 1992	2.1	1.5	0.6
June 1992	1.0	1.3	0.3
Sept. 1992	0.9	1.1	0.2
Dec. 1992	0.5	1.1	0.6
Mar. 1993	1.1	1.2	0.1
June 1993	1.3	1.5	0.2
Sept. 1993	1.2	1.9	0.7
Dec. 1993	1.3	1.5	0.2
Mar. 1994	1.2	2.0	0.8
June 1994	1.7	2.0	0.3
Sept. 1994	1.4	2.1	0.7
Dec. 1994	1.8	2.3	0.5
Mar. 1995	1.3	2.3	1.0

[a]Inflation rates were calculated on the basis of a 12-month moving average.

SOURCE: Reserve Bank of New Zealand.

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Agreement permitted a maximum rate of 2 percent. When one considers that the inflation rate approached 20 percent during the 1980s, the record since 1989 is quite good. New Zealand now has a monetary policy framework that gives investors and labor market participants a high degree of confidence that the country will maintain a reasonably stable price level.

Since macroeconomic disruptions, such as the massive disinflation of the early 1990s, are now much less likely, the errors in future forecasts may be of an even lesser magnitude. The refinement of the bank's formal forecasting model may also help.

Finally, it should be noted that the New Zealand Treasury began to issue inflation-indexed bonds in 1995. By looking at the spread between the yields on traditional, unindexed bonds and on the new securities, the bank might gain additional insights into the inflation expectations of financial market participants. If the spread exceeded 2 percent, the bank would have an additional indicator that monetary conditions were not sufficiently tight. If the spread were very small or negative, it would indicate that monetary conditions were overly restrictive. To date, trading in the new bonds has been rather thin, and it may be awhile before they provide a reliable indicator of inflationary pressures.

Conclusion

The tightening of monetary conditions which began in 1994 eventually brought about a decrease in inflationary pressures in New Zealand. Production initially slowed, but there was no recession. During 1997 the underlying inflation rate again fell below 2 percent. However, the appreciation of the exchange rate that occurred until 1996 did do considerable damage to exporters, and political reverberations were felt inside the Reserve Bank itself. A new political party, New Zealand First, campaigned on a platform that included a promise to protect the interests of exporters better than the ruling National Party had been able to do. The results of the 1996 elections were thus that the National Party could not secure a clear majority in the Parliament and had to join New Zealand First in a coalition government in order to stay in power.

As part of the coalition agreement, the inflation target for the Reserve Bank was widened to the current 0–3 percent band. New Zealand First argues that the bank now has more leeway for easing monetary policy, and that such easing could bring short-term relief to exporters.

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The new Policy Targets Agreement (see Appendix) also includes "sustainable economic growth" as a Reserve Bank objective. For its part, the Reserve Bank views price-level stability as a precondition for sustainable economic growth, and the consensus opinion in New Zealand seems to be that the changes in the most recent PTA are largely cosmetic.

Politics will never be far from the power to create money. Debate continues as to whether price-level stability should be the sole or even the primary macroeconomic objective of monetary policy. However, the forecasting record of the Reserve Bank of New Zealand provides some assurance that "long and variable lags" need not be an insurmountable obstacle to the achievement of such an objective.

Appendix: The 1996 Policy Targets Agreement

The following PTA was signed by Donald T. Brash, governor of the Reserve Bank of New Zealand, on December 10, 1996. It is a performance contract to which the governor commits himself.

POLICY TARGETS AGREEMENT

This agreement is signed under section 9(4) of the Reserve Bank of New Zealand Act 1989 (the Act) by the Minister of Finance (the Minister) and the Governor of the Reserve Bank of New Zealand (the Governor). It replaces that signed on 16 December 1992.

In terms of section 9 of the Act, the Minister and the Governor agree as follows:

1. Price Stability Target

Consistent with section 8 of the Act and with the provisions of this agreement, the Reserve Bank shall formulate and implement monetary policy with the intention of maintaining a stable general level of prices, so that monetary policy can make its maximum contribution to sustainable economic growth, employment and development opportunities within the New Zealand economy.

2. Measurement of Price Stability

a) In pursing the objective of a stable general level of prices, the Bank will monitor prices as measured by a range of price indices. The formal price stability target will be defined in terms of the All Groups Consumers Price Index (CPI), being the measure that is monitored most closely by the public.

b) For the purposes of this agreement, 12-monthly increases in the CPI of between 0 and 3 percent will be considered consistent with price stability.

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3. Deviations from the Targets

a) There is a range of possible price shocks arising from external sources, certain government policy changes, or a natural crisis which are quite outside the direct influence of monetary policy. The Bank shall generally react to such shifts in relative prices in a manner which prevents general inflationary pressures emerging.

b) This approach means that the CPI inflation rate can be expected to move outside the 0 to 3 percent range in response to particular shocks. The principal shocks are considered to be:

- — significant changes in the terms of trade arising from an increase or decrease in either import or export prices;
- — an increase or decrease in the rate of GST, or a significant change in other indirect tax rates;
- — a crisis such as a natural disaster or a major disease-induced fall in livestock numbers which is expected to have a significant impact on the price level;
- — a significant price level impact arising from changes to government or local authority levies; and
- — a movement in interest rates that causes a significant divergence between the change in the CPI and the change in the CPI excluding the interest costs component.

c) In the event of such shocks, the Reserve Bank shall be fully accountable for its handling of the price effects, and, in particular, for any movements outside the 0 to 3 percent band. In each Policy Statement made under section 15 of the Act, the Bank shall detail fully its estimate of the direct price impact of any such shock and the impact on the Bank's achievement of the price stability target. The Bank shall also detail what measures it has taken, or proposes to take, to ensure that the effects of such shocks on the inflation rate are transitory.

4. Renegotiation of the Targets

The policy targets are established on the understanding that the monetary policy instruments available to the Bank are adequate to achieve the objective. The Governor shall inform the Minister if he considers that any changes in the availability or effectiveness of these policy instruments impair the conduct of monetary policy. The Minister and the Governor may then set new policy targets.

5. Implementation

a) The Bank shall implement monetary policy in a sustainable, consistent and transparent manner.

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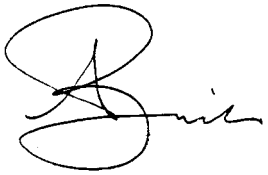
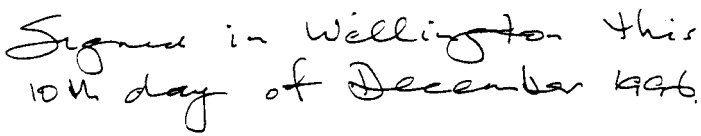
b) Each Policy Statement released by the Bank under section 15 of the Act shall contain a statement of how the Bank proposes to formulate and implement monetary policy to ensure that price stability is maintained over the succeeding five years.



Governor

Minister of Finance



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Mexican Monetary Lessons

A. James Meigs

Mexico gave exchange rate pegging a thorough test between 1988 and 1994. Pegging failed to deliver the expected benefits. Instead, it made achievement of price stability and sustained economic growth more difficult. If Mexico had adopted market-determined exchange rates instead of pegged rates, I believe there would have been no Mexican peso crisis in 1994–95.

Most explanations of the peso crisis focus on what the Mexican government and the Banco de México could have done, or should have done, in 1994 to avoid the devaluation. But 1994 was too late for that. The seeds of the crisis were already planted in 1988 when the government and central bank decided to peg the peso to the dollar.

Pegging the peso to the dollar in the face of large, sudden capital inflows and outflows in the 1990–94 period presented the Banco de México with the difficult task of trying both to control the peso/dollar exchange rate and to maintain a noninflationary growth of the monetary base. Moreover, by adopting a pegged exchange rate regime, Mexico made itself more vulnerable both to external shocks, such as swings in U.S. monetary policy, and to internal political shocks. Any sign of political instability that threatened to change the pegged rate would now give Mexican and foreign investors an incentive to jump from peso assets into dollar assets.

In January 1996, Francisco Gil-Díaz and Agustín Carstens of the Banco de México stated,

> As with the 1982 Chilean crisis, an explosion of scholarly papers, seminars and news articles has sprouted around the 1994–1995

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> Mexican economic crisis. We have the conjecture that this is partly so because both crises were quite unexpected: both outcomes were contrary to the forecasts and anticipations of the great majority of professional economists and market participants [Gil-Díaz and Carstens 1996b: 2].[1]

If the great majority of professional economists and market participants expected some other outcome, why were so many experts so wrong? That question makes the Mexican experience a useful case for reexamining ideas that were widely held by economists, investors, and speculators before the crisis and that probably will be debated for years to come. Pegging currencies to the dollar or to other strong currencies had met wide approval in governments, international financial institutions, financial markets, and academic economics departments.

Naturally, it is much easier to explain the behavior of people and markets after something happens than it is to predict how they will behave in advance. Fortunes have been won or lost on small differences in prediction skills at poker or on Wall Street. But not all economists failed to predict the Mexico crisis. Milton Friedman saw it coming, and said so, in 1992, more than two years before the devaluation. It would be useful, therefore, to consider how he could predict from information available in 1992 what so many others did not predict until much later, if at all.

In May 1992, Friedman visited the Banco de México, where he got data on the relative rates of inflation in the United States and Mexico, the relative changes in the money supply, and the exchange rate peg. He concluded that Mexico's exchange rate policy was unsustainable and that it was time to set the peso free or else to reduce the rate of monetary growth. His comments on those points drew extensive press coverage in Mexico at the time (e.g., Morales 1992).

In a later comment on his reaction to the Mexican figures, he said, "I must record that I did not regard it as anything special at the time. It seemed to me that anybody who looked at those same numbers had to come to the same conclusion."[2] In his view, the problem was not lack of information but rather one of deciding what information to consider and how to interpret it.[3]

[1]Francisco Gil-Díaz and Agustín Carstens are, respectively, vice governor and general director of economic research at the Banco de México.

[2]Luis Pazos, a prolific writer on economics and politics at the Centro de Investigaciones Sobre la Libre Empresa (CISLE) in Mexico City, was inspired by conversations with Milton Friedman to write many articles and three books on the dangers of exchange-market intervention (Pazos 1993, 1994, 1995, 1996).

[3]Friedman's comments were drawn from letters to the author on March 4 and May 23, 1996 (Friedman 1996a, 1996b).

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The uncertainty over which numbers to watch reflected wide differences of opinion within the economics profession regarding how international monetary relations should be explained. Friedman (1996b) said he had not quite realized "the extent to which in practice the approach via quantity theory [monetarist] and the approach via international trade and financial movements had become nearly exclusive ways of looking at things rather than components of an integrated view."

Friedman's 1950 challenge to the conventional wisdom in "The Case for Flexible Exchange Rates" (Friedman 1953) may be more helpful in understanding the Mexican peso crisis than what he said in 1992. When he wrote his prophetic essay the grand post-World War II Bretton Woods experiment with fixed but adjustable exchange rates was in its early stages. Member nations were expected to be able to adjust their exchange parities through agreement with other member governments and with the assistance of the International Monetary Fund. But, as Friedman (1953: 164) stated, that design for occasionally adjusting exchange rates in an orderly manner contained a fatal flaw:

> Even though an exchange-rate change would not otherwise be the occasion for a crisis, speculative movements are highly likely to convert it into one, for this system practically insures a maximum of destabilizing speculation. Because the exchange rate is changed infrequently and only to meet substantial difficulties, a change tends to come well after the onset of difficulty, to be postponed as long as possible, and to be made only after substantial pressure on the exchange rate has accumulated. In consequence, there is seldom any doubt about the direction in which an exchange rate will be changed, if it is changed. In the interim between the suspicion of a possible change in the rate and the actual change, there is every incentive to sell the country's currency if devaluation is expected (to export "capital" from the country) or to buy it if an appreciation is expected (to bring in "capital"); either can be done without an exchange loss and will mean an exchange gain when and if the rate is changed.

The system Friedman described was like an overloaded ferry boat that will capsize if fear drives many of the passengers to the same side at the same time. More than four decades later, he saw clues in Mexico's situation that led him to predict such an accident. The Mexican authorities might argue at that time and later that the situation did not call for a change in their exchange rate policies. But by December 1994, the power to decide what the peso/dollar exchange rate should be was no longer in their hands, for reasons that had been outlined in the Friedman essay. Pegging the peso to the dollar had

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"practically insure[d] a maximum of destabilizing speculation." Much of my paper applies the 1950 Friedman model to a world of much larger and more closely integrated financial markets than existed when he first identified the fatal flaw in a system of pegged exchange rates.

Exchange Rates and Prices

In the seven years before the 1994–95 crisis, Mexico conducted two major policy experiments. One was an extremely ambitious program of structural reforms aimed at making the Mexican economy more efficient and more productive through freeing up markets, privatizing government-owned businesses, balancing government budgets, reforming the tax system, enhancing property rights, and opening Mexico to world trade by unilaterally reducing trade barriers and by entering the North American Free Trade Agreement (NAFTA). The other was an experiment in trying to achieve a stable price level by pegging the peso to the U.S. dollar and by incomes policies (the Pactos).

The two major parts of the stabilization program were mutually reinforcing. Whatever the structural reforms might accomplish in increasing productivity and efficiency would help to curb inflation and would reduce adjustment costs in the anti-inflation effort. Curbing inflation would help in the structural reforms by improving the price information used for allocating resources and by making Mexico a more attractive place for Mexicans and foreigners to invest.[4] Unfortunately, the breakdown of the price-stabilization strategy in December 1994 suddenly made the structural reform program far more difficult.[5]

One of the main arguments in favor of pegging the peso to the dollar was that it would provide an anchor for Mexico's price level. The Banco de México succeeded in holding the exchange rate to a very slow rate of depreciation until the exchange rate target was abandoned in 1994. The steep decline in Mexico's inflation rate from a peak of 180 percent in February 1988 to a low of 6.7 percent in September 1994 (Figure 1)[6] has few parallels in monetary annals. The anti-inflation policy appeared to be a brilliant success.

[4]Pedro Aspe, minister of finance and public credit for much of this period, provides a definitive inside economist's account of the Mexican stabilization program in his *Economic Transformation the Mexican Way* (1993).

[5]For a sample of how the financial crisis is likely to make continuing the program of structural reforms ("neo-liberalismo") more difficult, see Lara (1995) and Schettino (1995).

[6]All data used in the charts were drawn from the Banco de México, the Instituto Nacional de Estadística Geografía y Informática (INEGI), the Board of Governors of the Federal Reserve System, the International Financial Statistics (IFS) of the International Monetary Fund, and Haver Analytics.

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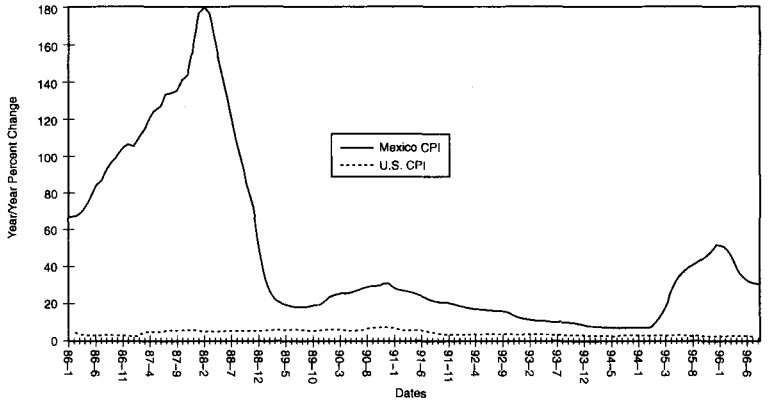
FIGURE 1

ANNUAL CHANGES IN MEXICAN AND U.S. CONSUMER PRICES, 1986–96
(MONTHLY)



Two major strands in the government's stabilization strategy were credited with bringing the inflation rate down so quickly. The first strand was the government's decision on March 1, 1988, to fix the peso/dollar exchange rate at its February 29, 1988, level for a period of three months within the context of an anti-inflation pact. The period of the fixed rate was subsequently extended through the end of 1988 and was followed by a series of crawling pegs and later a band.[7]

One expected advantage of either a fixed or crawling peg is that it is supposed to make a country's anti-inflation policy more credible than it would otherwise be. In effect, a pegging country borrows credibility from its target country—market participants are expected to believe a pegging central bank will behave in a noninflationary way not just because its managers are virtuous and know what to do but also because they will have to stay in line with the monetary policies of their big partner.

The second strand in the explanation was the Pact for Economic Solidarity (Pacto), in which the president of the republic and representatives of labor, farming, and business signed agreements on a series of measures to reduce the size of the public administration, monetary restraint, correction of wage momentum (reducing indexation in labor contracts), agreements on prices in leader sectors, and liberalization

[7]For a chronology of Mexican exchange market developments and policies from 1982 through 1994, see Folkerts-Landau and Ito (1995: 76–77).

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of international trade.[8] The Pact for Economic Solidarity was followed by the Pact for Stability and Economic Growth beginning in January 1989. These Pactos, or incomes policies, were designed to mitigate some of the adjustment costs that would have been expected from a more conventional program of fiscal and monetary restraints and to accelerate wage and price adjustments by reducing effects of "backward indexation." There were 12 overlapping renewals of the Pactos between December 1987 and November 1994 (Gil-Díaz and Carstens 1996b: 3). Promising a fixed or nearly fixed exchange rate in the Pactos helped to win public acceptance for other parts of the stabilization program. Remembering their painful experiences in the major devaluations of 1976, 1982, and 1987, the people of Mexico devoutly wished for a stable exchange rate.

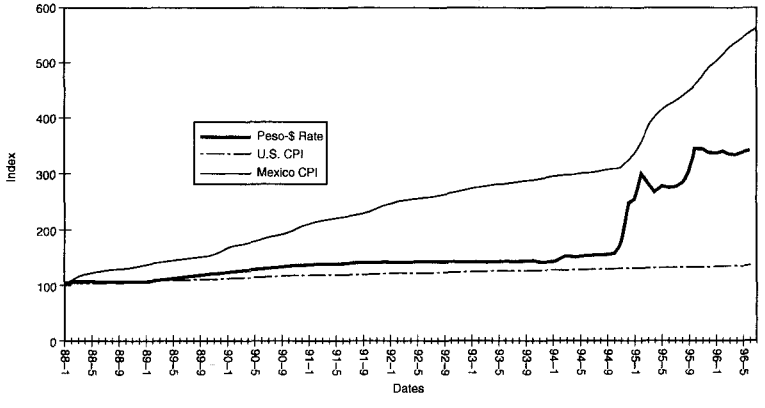
Diverging Price Levels

Figure 2, however, tells a surprising story. Mexican consumer prices (as measured by the consumer price index) continued to rise in relation to U.S. consumer prices, even though Mexico's measured year-to-year inflation rate fell toward the U.S. inflation rate. Although this result seems to defy common sense, the apparent paradox can be explained by simple arithmetic: To reduce the spread between Mexican and U.S. consumer price *levels*, Mexico's year-to-year inflation

FIGURE 2

MEXICAN AND U.S. CONSUMER PRICES AND EXCHANGE RATE, 1988–96

(MONTHLY LEVELS IN INDEX FORM, JANUARY 1988 = 100)



[8]For details of the 1988–89 stabilization plan, including the role of the Pactos, see Aspe (1993: 25–26).

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rate would have had to fall below the very low U.S. rate. That did not happen.

By the time Friedman visited Mexico in May 1992, he could see that Mexican consumer prices had risen 133 percent following adoption of the pegging policy at the end of February 1988, while U.S. consumer prices had risen 19.8 percent in the same period. By November 1994, Mexican consumer prices had risen 187 percent, while U.S. prices had risen 29 percent. Depreciation of the exchange rate had offset roughly 36 percentage points of the difference in consumer price levels in the two countries by the time of Friedman's visit and 53 percentage points by December 1994.

Although the widening spread between Mexican and U.S. consumer price levels did not indicate when or how critical steps or turning points might occur, it indicated that pressure toward changing the exchange rate peg was gradually increasing. The exchange rate peg that had been set at the end of February 1988 appeared less and less appropriate as price levels of the two countries diverged in the next seven years.

Because prices of roughly a third of Mexico's consumer products included in the Mexican consumer price index were tied to U.S. prices or exposed to international competition, the Mexican CPI, as shown in Figure 2, understated the rise in prices of purely Mexican goods and services. The behavior of Mexican consumer prices, relative to U.S. consumer prices, therefore, was less favorable to holding the exchange rate peg than it appeared to be. Pegging the peso to the dollar was equivalent to putting ceilings on the peso prices of imported goods. When the peg was removed in December 1994, the prices of imported goods and domestic goods competing with imports jumped, pushing the whole consumer price index upward.[9]

The change in the exchange rate from 3.44 pesos per dollar in November 1994 to 7.66 pesos per dollar in November 1995 was roughly equivalent to an increase of 120 percent in the prices of imported goods facing Mexican consumers. If imported goods and locally produced goods competing with imports had a weight of about one-third in the consumer price index, and if changes in their peso prices fully reflected changes in the exchange rate, the devaluation should have resulted in an increase of about 40 percent in Mexico's CPI. The actual increase in the overall index was 48 percent, suggesting

[9]Jerry Jordan suggested to me early in 1995 that the sharp rise in Mexico's inflation rate after the devaluation was similar to what one should expect if price controls had been removed from a large class of consumer goods and services.

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that prices of other Mexican goods also rose, but by less than prices of imports and import-competing goods.

Consumer Prices and Expected Exchange Rates

The widening spread between Mexican and U.S. consumer prices, while the exchange rate was being controlled, had several implications for the ability of the Banco de México to hold to its exchange rate targets:

1. Monetarists would interpret an increasing spread between Mexican and U.S. consumer price levels to mean that the exchange rate must eventually adjust in order to restore purchasing power parity of the peso in goods and services of both countries. At the controlled exchange rate, and with the prevailing monetary policies of both countries, Mexican consumers could buy more goods and services by exchanging their pesos for dollars to spend on imported goods. Foreign consumers could buy fewer Mexican goods and services with their dollars. Although Mexican prices might eventually fall enough in relation to U.S. prices to eliminate the discrepancy in purchasing power of the peso in goods of both countries, that might take a long time. The direction of an eventual adjustment of the exchange rate—as an alternative to depressing Mexican prices and wages—was clear, as Friedman argued in his 1950 essay. The longer the adjustment was postponed, furthermore, the larger it was likely to be.
2. Mexican consumers did not have to read the Mexican and U.S. CPI reports. They could tell from shopping in the markets that an increasing spread between Mexican and U.S. prices gave them more incentive to substitute imports for locally produced goods and services. Meanwhile, the fall of trade barriers made that easier to do than it would have been in earlier years. The combination of changes in price incentives and improvement in trading opportunities would tend to increase the current account (trade) deficit and thus would raise speculators' expectations of a change in the exchange rate target.
3. Some analysts who focus on the balance of payments in analyzing behavior of exchange rates would interpret the increasing spread between Mexican and U.S. prices as "real exchange rate appreciation." They would expect appreciation of the real exchange rate to reduce Mexico's competitiveness in its export markets. That might lead the Mexican authorities to devalue the peso in order to try to increase employment and income in Mexico by stimulating growth in exports.[10]

[10]Rudiger Dornbusch and Alejandro Werner (1994) advanced essentially this view in a joint paper in which they recommended devaluing the peso.

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Monetary Policy Mandates

Unlike the U.S. Federal Reserve System, which has no clearly expressed price-stability mandate, the Banco de México is required by the Constitution (article 28, paragraph 6) to achieve price stability as its primary objective. According to the bank's 1994 annual report, inflation abatement had been given special emphasis in Mexican economic policy since the end of 1987. Reducing inflation was viewed as a necessary condition for attaining social justice and long-run economic growth (Banco de México 1995: 50).

In order to carry out its mandate, the bank has the authority to manage its own credit independently, which can be defined as the power to determine monetary policy. Nevertheless, as the annual report notes, the effectiveness and the reach of monetary policy are not independent of exchange rate policy. In a system in which the authorities promise to keep fluctuations in exchange rates from going outside a specified range, monetary policy remains strongly conditioned by what happens in the foreign exchange market. Thus, from the report, it is clear that the authorities recognized that achieving price stability and directly controlling exchange rates are competing objectives.

Because the Pactos promised fixed, or nearly fixed, exchange rates (in part to win the public's cooperation in the stabilization program), the Banco de México was bound to try to keep that promise, as well as to honor its price stability mandate. The exchange rate peg, therefore, was far more than a simple instrument for anchoring the Mexican price level.

On November 10, 1991, a new exchange rate rule was adopted to facilitate achievement of the bank's two main objectives. The new rule was an expanding band within which market exchange rates could float without triggering exchange purchases or sales, which otherwise would increase or reduce the monetary base and the inflation rate (unless offset by "sterilization"). It was decided initially that the floor of the band would remain fixed at a level of 3.0512 new pesos per dollar, a rate at which the Banco de México would be obliged to buy foreign exchange (dollars).[11] The initial ceiling was 3,086.4 old pesos per dollar, for a range of 1.15 percent between the floor and the ceiling. The ceiling of the band was to rise daily on a "desliz," or slide, of 0.0002 new pesos per dollar. After October 20, 1992, the

[11]The distinction between old and new pesos resulted from the currency reform of 1993, which replaced the old peso with a new peso at a rate of one new peso per 1,000 old pesos. This simplified the printing of new currency by eliminating many zeros. Throughout this paper, all pre-1993 data have been converted into new pesos, and simply called pesos.

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upper limit of the flotation band began to slide upward at a rate of 0.0004 new pesos per dollar per day.

The band and daily exchange rates within it from the time the band was adopted on November 11, 1991, until December 19, 1994, can be seen in Grafica 15, "Regimen Cambiario" of the 1994 annual report (Banco de México 1995: 52). According to Grafica 15, the band had a range of 3.41 percent on October 20, 1992; 7.97 percent on October 3, 1993; and 12.62 per cent on September 24, 1994. Each of those dates marked the signing of a new Pacto. The bank did not choose the permissible range of fluctuations in the peso/dollar rate; that was established by a formal agreement included in each Pacto. The monetary authorities, therefore, were operating under two government-stipulated rules or mandates: (1) the constitutional mandate to maintain stability in the purchasing power of the national money, and (2) the Pacto agreements to keep the peso/dollar rate within a specified band.

According to Gil-Díaz and Carstens (1996b: 3), "The exchange rate would adjust within the confines of this band to market conditions and its fluctuations would not trigger pressures for increased wages or prices since the possibility of such fluctuations had been agreed upon in the context of the Pact." The bank only intervened whenever the market exchange rate reached either limit of the band. If the rate reached the bottom of the band, the bank had to buy dollars. If it reached the ceiling, the bank had to sell dollars. With this system, the bank intervened less frequently than it had before, thus reducing the difficulty of managing the monetary base.

With less frequent interventions, said the report, reserves were conserved for countering large movements of the exchange rate. The upper limit of the band was expected to prevent erratic rises in the peso/dollar rate (depreciation) that could affect inflation expectations. The lower limit served to prevent the peso from appreciating too much (peso/dollar rate falling), which could damage the international competitiveness of the economy (Banco de México 1995: 53). Keeping the peso/dollar rate above the floor of the band required the bank to buy dollars for much of the time the band was in effect, until political and other shocks in 1994 reversed the direction of the capital flows and pushed the peso/dollar rate close to the ceiling, where the bank had to sell dollars.

Inconsistency in Goals

Michael Bordo and Anna Schwartz (1996: 437) argue that recent currency crises, including the peso crisis, reflect clashes between fundamentals and pegged exchange rates, just as did crises in the past:

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> In the traditional view, a country faces a currency crisis when inconsistencies arise between preserving pegged exchange rates, whether fixed or crawling pegs, and protecting domestic monetary and fiscal policy—the fundamentals—for the sake of internal stability and competitiveness. For countries that are part of a pegged exchange rate system, such as Bretton Woods or the EMS [European Monetary System], crises are an endemic part of the system. They arise because of unexpected shocks that may make unsustainable policies that were previously compatible with existing exchange rate arrangements. Market participants understand this tension and precipitate an attack on the currency by selling it short when destabilizing shocks occur.

The increasing spread between Mexican and U.S. price levels, shown in Figure 2, is a good example of an inconsistency between preserving pegged exchange rates and protecting domestic fiscal and monetary policies. The increasing spread tended to increase Mexico's current account deficit. Balance-of-payments watchers say that was bad, because it was a sign that the peso was "overvalued." But from a monetarist perspective the increase in Mexican purchases of imports and reduction in Mexican exports would be viewed as part of the adjustment process bringing Mexican prices into line with U.S. prices at the official exchange rate and with prevailing monetary policies. That is not necessarily a bad thing, if the Mexican government decides that it is essential to have a controlled exchange rate.

The alternative was to let the exchange rate adjust to the monetary policies of the two countries. Either adjustment course would benefit or injure some Mexican residents more than others while the adjustments were taking place. As Bordo and Schwartz suggest, investors and speculators inside and outside of Mexico could see this tension and wonder how serious was the government's commitment to controlling the exchange rate in light of its other policy goals.

The Monetary Base and the Money Supply

Imprecise as balance of payments figures inevitably are, the ones plotted in Figure 3 tell a story that helps to make sense of the problem the Banco de México faced in trying to manage exchange rates and the monetary base at the same time.

In the second quarter of 1989, dollars began to flow into Mexico to buy shares in newly privatized companies and to make other investments, as shown by the capital account line. The capital inflow reached a peak in the first quarter of 1994 and then declined sharply. According to the IMF, Mexico received $91 billion in net capital inflows in the period 1990–93, or roughly one fifth of all net inflows to developing

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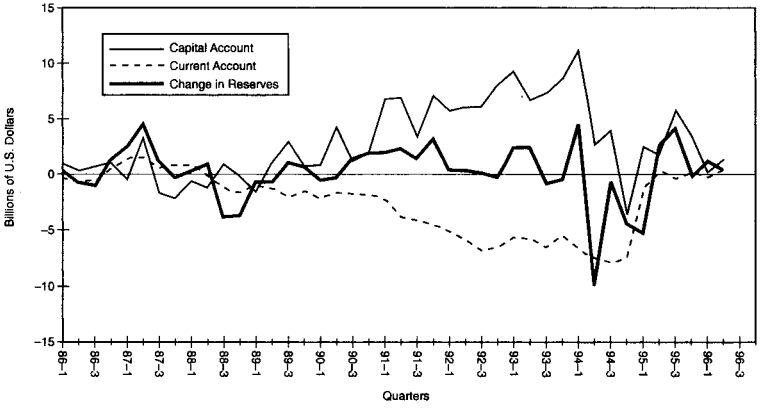
FIGURE 3

BALANCE OF PAYMENTS AND CHANGES IN EXCHANGE RESERVES, MEXICO, 1986–96



countries. Of this, net portfolio investment (securities) amounted to $61 billion and net foreign direct investment (plant and equipment and real estate) totaled $16.6 billion. In 1991–93, $22 billion of foreign investment flowed into the Mexican stock market, helping to push the Bolsa Index up 436 percent in dollar terms over the 1990–93 period (Folkerts-Landau and Ito 1995: 53).

As can be seen on the current account line, some of the dollars flowing in on capital account went right out again for net purchases of imported goods and services. When the current account line fell below the zero line on the vertical scale, the people of Mexico were buying more goods and services from other countries than they were selling there. That was the current account deficit which became so worrisome to balance-of-payments watchers.

The change in reserves line shows when the Banco de México bought dollars and issued new pesos to keep the peso/dollar exchange rate within the bounds set by the bank's targets. This line was not drawn directly from the balance-of-payments accounts but was derived from reports of Banco de México holdings of exchange reserves in the IMF's International Financial Statistics. Over the 1990–93 period, Banco de México exchange reserves rose rapidly from a level of $6.3 billion at the end of 1989 to $25.1 billion at the end of 1993 (IMF estimate. Folkerts-Landau and Ito 1995: 53). The bank usually, but not always, bought exchange reserves when capital flowed into Mexico and sold reserves when capital flowed out or flowed in more slowly.

Here is where the difference between the balance-of-payments analysis and the monetary view becomes critical. In a balance-of-

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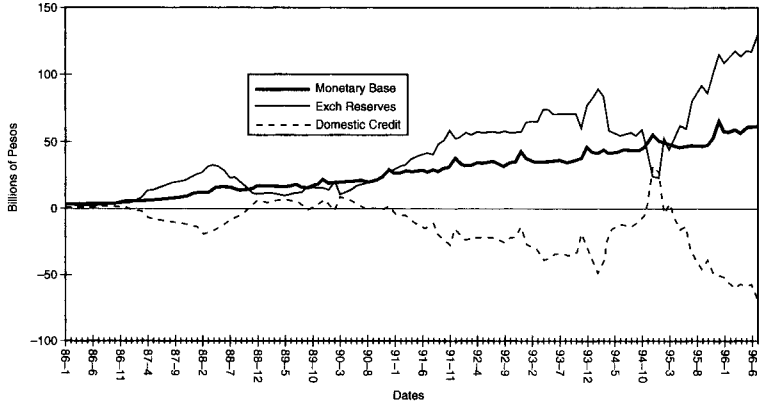
payments framework, a central bank acquiring foreign exchange reserves is generally viewed as behaving in a good, prudent way; it is storing ammunition for a future defense of its country's exchange rate. The buildup in reserves is supposed to make dollar investors and speculators more confident that the exchange rate target will not change.[12] In a monetary framework on the other hand, acquiring reserves while pegging an exchange rate is viewed as likely to undermine the peg by building up the potential for inflation in the capital-importing country. That buildup will occur unless the central bank can prevent its purchases of foreign reserves from increasing the monetary base and the money supply—that is, unless it can "sterilize" the reserve purchases.

Sterilizing exchange interventions is not easy to do. In fact, some economists doubt that it is possible to control exchange rates without affecting a country's monetary base and money supply (Schwartz 1995; Stockman 1995; Humpage 1995; and McCallum 1996: 138). Despite such expert opinions, the Banco de México appears to have succeeded in sterilizing most exchange purchases in the 1990–93 period. The bank held growth of the monetary base to an impressively straight and narrow path for a long time, in the face of large capital flows and very large exchange purchases and sales (see Figure 4).[13]

FIGURE 4

MONETARY BASE, EXCHANGE RESERVES, AND NET DOMESTIC CREDIT IN MEXICO, 1986–96



[12]For rigorous analyses and thorough surveys of the literature on implications of international capital flows in a primarily balance-of-payments format by IMF staff economists, see Folkerts-Landau and Ito (1995), Goldstein et al. (1993), and Mathiesen and Rojas-Suárez (1993).

[13]Figure 4 is based on a chart in Mancera (1995).

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Sterilizing Exchange Interventions

Even with the broadening of the floating-rate band described earlier, the Banco de México had a major problem in trying to prevent inflows of capital in the 1990–93 period from pushing the peso/dollar rate out of the band or from ballooning the monetary base and the money supply. As Miguel Mancera, governor of the Banco de México, stated in his *Wall Street Journal* article, the bank "followed a classic sterilization strategy: namely, compensating increases in international reserves by decreases in its domestic credit. Conversely, it expanded primary credit to counteract the demonetization caused by decreases in its reserves" (Mancera 1995). In short, the bank did not follow a simple rule of allowing the supply of pesos in Mexico to be determined by inflows or outflows of dollars, whether those flows were induced by changes in U.S. monetary policy or by the shifting preferences of Mexican and foreign investors and currency speculators.

Governor Mancera's statement apparently was widely misunderstood, especially by people who believed that the full effects of reserve purchases and sales should be allowed to flow through to the monetary base and the money supply, as they are supposed to do in Argentina, according to the Argentine convertibility law. Some Mexican and U.S. economists have argued that Mexico would have been better off with an Argentine-style currency board in the 1990s and that it should adopt one in the future.[14]

The primary expected advantage of a currency board is that it would prevent the monetary authorities from issuing too much money, as in the many instances of central banks creating new money to finance government deficits. But during most of the period examined here, Mexico did not have large deficits to finance. In one of the major triumphs of the stabilization program, the federal budget had been brought into balance. According to an OECD survey, "Mexico's fiscal position in 1994, in terms of both the primary surplus and overall financial balance, was one of the most favorable among OECD countries, while its public-sector debt was among the lowest" (OECD 1995: 25).

If the Banco de México had exchanged pesos for dollars one-for-one (or at some other fixed ratio) in the way the Bank of Argentina is supposed to do, the monetary base would have risen (or fallen) with the exchange reserves line. With the massive capital inflows the Banco de México faced in the 1990–93 period, a currency board would have mandated a much larger expansion of the monetary base

[14]See, for example, Hanke (1995), Salinas-León (1996), and Bartley (1996).

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and the money supply than the one the bank actually permitted. This is where a policy of trying to peg the exchange rate was clearly in conflict with the policy of trying to reduce inflation. Instead of having to curb an internal inflation threat caused by the traditional enemy—deficit financing—the Banco de México had to combat "imported inflation" when dollars flowed into Mexico from outside.

Between December 1989 and December 1993, the bank issued approximately 61.7 billion high-powered pesos in exchange for dollars to keep the peso/dollar rate inside the target band.[15] In the same period, it *reduced* net domestic credit on its balance sheet by 36.7 billion pesos to offset more than half of the change in its exchange reserves measured in pesos. The net result of those exchange purchases and sterilizing operations was an increase of 25 billion pesos in the monetary base.

If the Banco de México had been operating by currency-board rules in the years of large capital inflows, the resulting increases of the monetary base (and any version of money supply) would have been more than twice as large as the ones the bank actually permitted under its 1989–93 operating rules.

Why Sterilizing Was So Difficult

According to a World Bank survey of adjustments to capital inflows in Latin America and East Asia, the Banco de México and the Mexican government decided early in 1990 to sterilize the monetary effects of capital inflows, to reduce their inflationary pressure and their tendency to cause appreciation of the real exchange rate (Corbo and Hernandez 1994: 19–20). In addition to the classic central-bank sterilizing measures described by Mancera, the Mexican authorities created treasury bonds indexed to the exchange rate (Tesobonos) and others to the consumer price index (ajustabonos), steps that were designed to increase incentives for Mexican and foreign investors to hold peso assets instead of shifting into dollars. The authorities also used indirect restrictions on capital inflows, such as restricting the foreign currency liabilities of commercial banks to 10 percent of their total liabilities (introduced in April 1992), and a 15 percent reserve requirement on all the borrowing from abroad denominated in foreign currency.

The Mexican authorities were not dealing with a financial market composed of separate segments, or boxes, sealed off from one another

[15]I say "approximately" because part of the indicated change in levels of exchange reserves (which I called "purchases") was produced by a change in the peso/dollar exchange rate used to convert dollar reserves into peso equivalents. During the period covered, between December 1989 and December 1993, the peso/dollar rate rose from 2.6298 to 3.1077, or 18 percent. I did not try to adjust for that.

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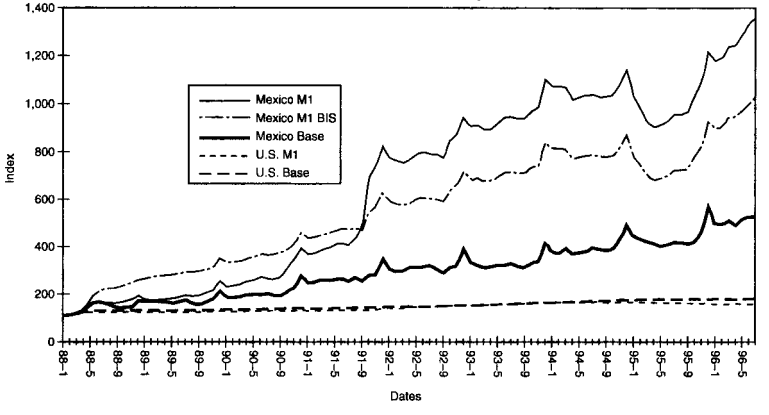
and from the financial markets of other countries. With completely segmented markets, they could have bought dollars out of the foreign currency segment of the Mexican market and sold Mexican bonds or other assets into the domestic segment of the Mexican market with no unwanted repercussions either between segments of Mexican financial markets or between Mexican markets and foreign markets. But, in fact, all of those market segments, domestic and foreign, were closely linked by wires and satellites. Effects of any action taken by the bank would ripple throughout world financial markets and perhaps wash back within hours or days with consequences that were difficult to foresee. To sell more Mexican bonds in the domestic market, the bank would have to offer a higher yield or some other inducement, such as promising to repay in dollars if necessary (as with the Tesobonos). The higher risk-adjusted yield on Mexican bonds then would provide an incentive for investors and speculators in New York or Chicago or Mexico City to transfer more dollars to Mexico to buy bonds, thus increasing the capital inflow that the bank was trying to sterilize. At times, the bank was like someone trying to bail out a boat with water leaking in almost as fast as it could be bailed out.

In the end, the bank bought enough dollars with net high-powered pesos to keep the peso/dollar rate from falling through the floor of the target band. One unwanted result was the more-than-eight-fold increase in the number of pesos (M1 BIS) in circulation in Mexico between February 1988 and the end of 1993, as shown in Figure 5. Such a large increase in the stock of pesos relative to the potential supply of goods and services in Mexico, and relative to the stock of

FIGURE 5

MEXICAN AND U.S. MONETARY AGGREGATES, 1988–96
(MONTHLY LEVELS IN INDEX FORM, JANUARY 1988 = 100)



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dollars in the world, meant that something eventually had to give—either peso prices of Mexican goods and services or the peso/dollar exchange rate or both.

That is why I believe the policy of pegging the peso to the dollar between 1988 and 1994 made controlling inflation more difficult than it would have been if exchange rates had been more free to adjust to the increase in demand for Mexican capital assets in those years. With market-determined rates, the capital inflows might, or might not, have been smaller but they certainly would have had less influence on the monetary base and the stock of pesos in Mexico.

Problems Interpreting Monetary Aggregates

The Banco de México operations described above—buying and selling foreign exchange and sterilizing most of those purchases and sales with changes in domestic credit—summed to the net levels of the monetary base shown in Figure 4. As can be seen in that chart, the level of the base, measured in pesos, rose on an apparently steady and narrow path from January 1986 through July 1996. However, when measured in the year-to-year percentage changes shown in Figure 6, growth rates of the base (the heavy solid line) fluctuated widely between January 1986 and mid-1989 and were much less variable thereafter.

The monetary base is the monetary aggregate that should be most closely under the control of the central bank. It is made up entirely of items on the central bank's own balance sheet. It also is the one most emphasized by the Banco de México in explanations of its operations. In most countries, including the United States, the monetary base is composed of currency outstanding (a liability of the central bank) and deposit balances of commercial banks at the central bank (bank reserves). In Mexico, however, there are no bank reserve balances at the central bank; the monetary base has consisted entirely of currency outstanding since 1991 (Gil-Díaz and Carstens 1996b: 23). Reserve requirements on deposits were eliminated in 1991 and so bank managers have held their balances at the Banco de México close to zero since then.

In Mexico, as in the United States, changes in banking practices and regulations, innovations such as credit cards, and shifts in public preferences for various means of payment and financial savings vehicles vastly complicated the problems of interpreting behavior of the monetary aggregates during the period covered here. However, that does not mean these monetary aggregates had become irrelevant; they still influence nominal income and prices. Therefore, their behavior cannot be safely ignored.

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The divergence in behavior of the two varieties of money plotted in Figure 6, M1 and M1 BIS, is an especially interesting case. Consider first, M1, which is essentially demand deposits and currency in the hands of the public. After rising to a peak in early 1988, the year-to-year growth rate of M1 (the narrow solid line) plunged to a trough in mid-1989. That certainly appeared to be a decisive turn toward restraint in monetary policy and was consistent with the announcements of the stabilization program. From the end of 1989 to the end of 1991, however, growth of M1 appeared to explode, in spite of the declared intent of the government and the Banco de México to continue the fight against inflation that had gone so well in 1988 and 1989. By the fourth quarter of 1992, the level of M1, as initially reported, was 353 percent higher than it had been in the fourth quarter of 1989. The average growth of reported M1 over the three years thus was more than 100 percent per year. Growth of a broader version of the money stock, M2, which is not shown in Figure 6, appeared to accelerate somewhat earlier than growth of M1. M2 expanded more than 150 percent in the year ending in the first quarter of 1990 after contracting during much of 1989.

As early as July and August of 1990, the apparent reacceleration in growth of M1 was being viewed with concern in the Mexican press as a possible precursor of inflation (see Gómez Maza 1990 and Velazquez 1990). By the time of Friedman's visit in May 1992, extraordinarily large increases in M1 and M2 in 1990 and 1991 had already been reported. The apparent precipitous upswing in monetary growth seemed sure to bring another surge of inflation in its wake. That, in turn, would certainly make it more difficult for the bank to control the exchange rate. The upsurge in growth of M1 was inconsistent with announced policies and also diverged sharply from the growth rate of the monetary base, which it had roughly paralleled from the beginning of 1987 to mid-1991.

The Cuenta Maestra Surprise

The Banco de México later explained that the apparent monetary explosion was a statistical artifact caused by changes in banking practices and regulations. The M1 (and M2) numbers for 1990 through 1992 were not what they appeared to be when they were first reported. An alternative M1 series called M1 BIS displayed a very different pattern, as can be seen in Figure 6. When growth of reported M1 accelerated in 1990 and 1991, growth of the alternative M1 BIS (the dashed line) stayed nearly flat and was much closer to the rate of growth of the monetary base than was the original M1. In the revised

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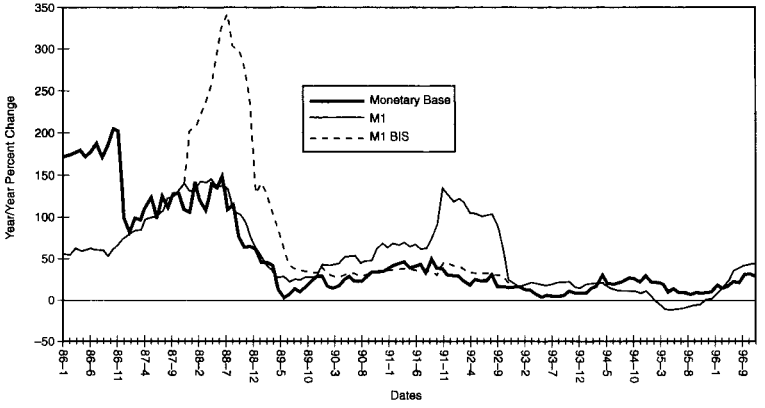
FIGURE 6

ANNUAL CHANGES IN MEXICAN MONETARY BASE, M1, AND M1 BIS, 1986–96



view, therefore, the 1989–92 spurt in reported M1 growth had greatly exaggerated the inflationary threat of monetary expansion.

However, the inflationary threat presented by growth of the alternative M1 BIS in 1987–88 had been far greater than was indicated by the original M1 data. The peak year-to-year increase in M1 BIS was 316 percent in the third quarter of 1988. In other words, M1 BIS had more than quadrupled in one year. By the time the exchange rate peg was set on March 1, 1988, and the new anti-inflation campaign was launched, Mexico had suffered a far more serious monetary shock in the late 1980s than the previously published monetary data indicated.

Figures 7–9 help explain the monetary data revisions the Banco de México subsequently produced.[16] They illustrate the large effects of innovations in banking practices and changes in banking regulations in 1987 through 1992. During the currency crisis following the major devaluation in November 1987, short-term interest rates rose to extremely high levels (Figure 7). Annual yields on 28-day Cetes (Mexican Treasury bills), for example, rose to peaks of more than 150 percent in January and February 1988. Perhaps responding to demands from their customers for an easily negotiable peso liquid asset, banks devised a special interest-bearing account called a "cuenta maestra." Cuentas maestras had some of the properties of NOW (Negotiable Order of

[16]The letters from Dr. Gil-Díaz included technical comments and a data set for monthly M1, cuenta maestra neta, and M1 BIS, nonseasonally adjusted, for January 1970 through December 1995. The M1 BIS series had been explained in Banco de México annual reports and speeches of Governor Mancera, but I had not seen them.

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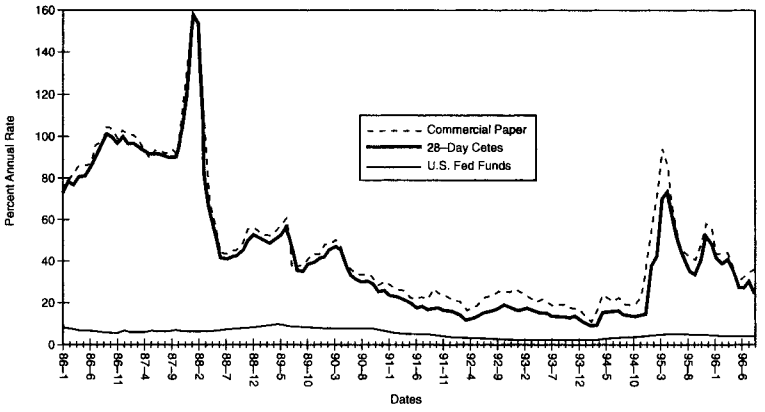
FIGURE 7

SHORT-TERM INTEREST RATES IN MEXICO AND THE UNITED STATES, 1986–96 (MONTHLY)



Withdrawal) accounts in U.S. banks. From the banks' viewpoint, they had the enormous advantage of being considered to be trust accounts that were not subject to Banco de México reserve requirements. From the holders' viewpoint, they were interest-bearing peso checking accounts.

From the viewpoint of monetary statistics users, however, the cuentas maestras badly distorted the data, because they were not included in any of the definitions of money used by the Banco de México at that time. Cuentas maestras grew on net from 4.5 billion pesos in December 1987, the first month for which they were reported, to a peak of 29 billion pesos in July 1991 (Banco de México 1996 data set "M1 Y M1 BIS"). For most of 1989, they actually exceeded reported M1. If cuentas maestras could be defined as money, this meant that about half of the actual narrow money stock of Mexico was not included in the M1 series published by the Banco de México and by the IMF's International Financial Statistics (the most convenient source of Mexican monetary data for many analysts in other countries at that time).

The Banco de México solution to the monetary underreporting problem was to require banks to move the cuentas maestras into their balance sheets. A new narrow monetary aggregate labeled M1 BIS was estimated retrospectively in order to have a more meaningful measure of money over the period in which cuentas maestras were not counted in Mexico's money stock. M1 BIS was equal to M1 plus cuentas maestras netas. Because the cuentas maestras were investment

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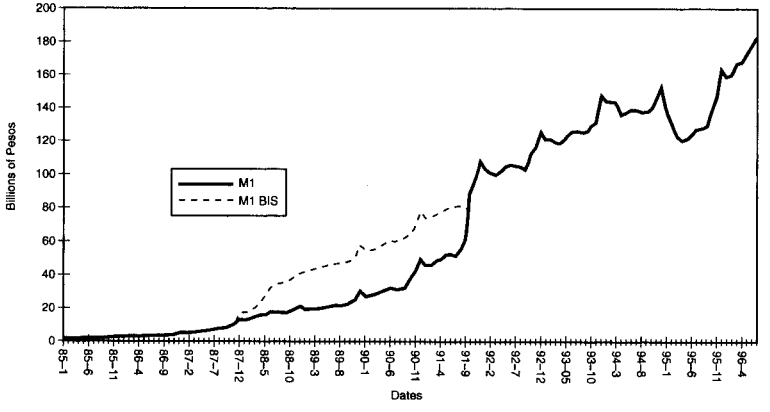
trusts managed by the banks, some of the funds were invested in regular bank checking accounts, probably in order to clear checks written against them. These checking accounts were netted out in cuentas maestras to avoid double counting.

Figure 8 shows what might properly be called "missing money" in the difference between the dashed line (M1 BIS) and the solid line (M1) from December 1987 through December 1991. Beginning in September 1991, the missing money was transferred rapidly from investment trusts, including cuentas maestras, which were not counted in M1, into regular bank checking accounts, which were counted in M1. The transfer of cuentas maestras contributed about 26.5 billion pesos to the 54.5 billion peso increase in regular M1 that occurred between the end of August and the end of December.[17] By December 1991, cuentas maestras had completely disappeared.

The effect of transferring cuentas maestras into regular checking accounts is clearly shown in Figure 6 by the sharp rise in reported M1 growth between August and December of 1991. After the transfers neared completion in late 1992, there was a sharp fall in reported M1 growth. Figure 6 also shows that growth of M1 BIS was much more closely related to changes in monetary base than was growth in M1 between 1989 and 1992.

FIGURE 8

MONTHLY LEVELS OF MEXICAN M1 AND M1 BIS, 1985–96
(NOT SEASONALLY ADJUSTED)



[17]Because these are not seasonally adjusted series, a large part of the August–December increase in M1 was the traditional increase in the Mexican money stock that occurs at year end.

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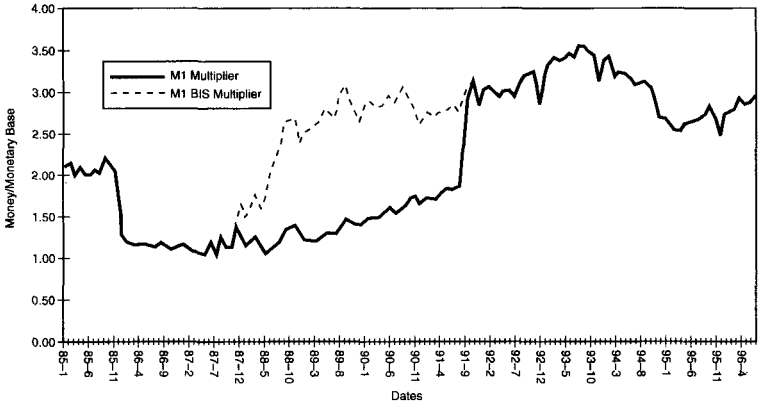
Monetary Implications of Bank Innovation and Changes in Regulations

Figure 9 shows some other interesting implications of Mexican banking innovations and changes in bank regulations in the late 1980s and early 1990s. The M1 multiplier for Mexico during 1986 and most of 1987 was small, ranging between 1.02 and 1.27, indicating that Mexican people and businesses held only a small part of their stock of pesos in regular checking accounts at Mexican banks in those years. An additional peso of monetary base (high-powered money) supplied by the Banco de México would therefore support an increase of 1.27 pesos of M1, at most before 1991.

The introduction of cuentas maestras by the banks, with zero reserve requirements and paying interest (prohibited on conventional checking accounts at that time), had the effect of raising the narrow money multiplier (the M1 BIS multiplier) to a range of more than 2 to 3. Therefore, each new peso of high-powered monetary base issued by the Banco de México to buy foreign exchange or for other purposes could increase the stock of M1 BIS by 2 or 3 pesos. When reserve requirements were abolished and banks were permitted to pay interest on demand deposits in 1991, the cuentas maestras were transferred into bank checking accounts. The M1 multiplier rose quickly to more than 3 from less than 2. The marked instability of the multiplier raises questions about how Banco de México operations affecting the monetary base influence the money stock and prices.

FIGURE 9

RATIOS OF M1 AND M1 BIS TO MONETARY BASE IN MEXICO, 1985–96
(MONTHLY LEVELS)



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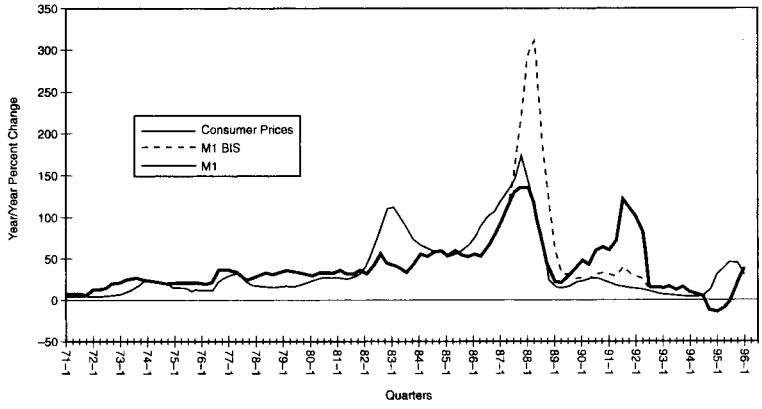
Money and Prices

The association between changes in M1 and changes in consumer prices between the first quarter of 1971 and the middle of 1989 in Figure 10 is startling. During that period of more than 18 years, the Mexican economy suffered numerous shocks that might be expected to influence consumer prices. Those shocks included rising and falling oil prices, a devaluation of the peso approximately every six years, the 1982 debt crisis, a devastating earthquake in 1985, business recessions in Mexico and the United States, nationalizations and privatizations in major industries, changes in subsidies and tariffs on various consumer goods, a rapid opening of trade with the rest of the world, and sweeping changes in fiscal, monetary, and regulatory policies. Nevertheless, rates of growth of money and prices rose and fell roughly together over most of the period. Major devaluations in 1982 and 1987 were followed by inflation spurts in which consumer price inflation actually ran ahead of M1 growth for a time.

Figure 11 displays the relation between money (M1 BIS) and consumer prices in Mexico for the 1980–96 period.[18] I substituted the Banco de México's M1 BIS series for M1, in order to minimize the distorting effects of the cuentas maestras between December 1987 and December 1991. Then I divided each quarterly average M1 BIS

FIGURE 10

MONEY AND INFLATION IN MEXICO, 1971–96
(ANNUAL CHANGES IN QUARTERLY AVERAGES, CONSUMER PRICES, M1, AND M1 BIS)



[18]I borrowed the design of Figure 11 from Milton and Rose Friedman's *Free to Choose* (1980: 257–61) and Milton Friedman's *Money Mischief: Episodes in Monetary History* (1992: 197–201).

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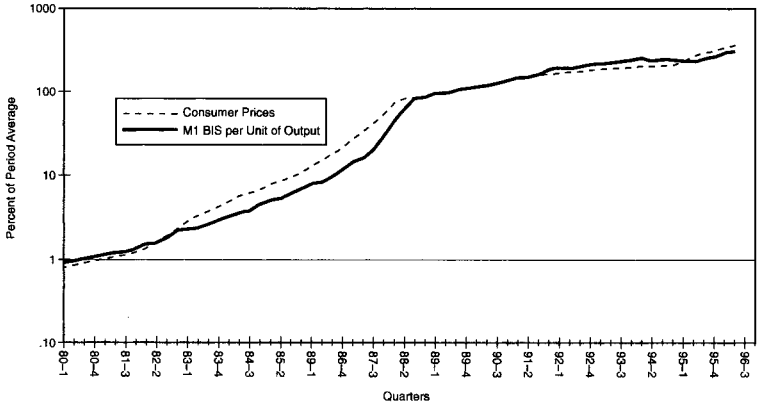
FIGURE 11

MONEY AND PRICES IN MEXICO, 1980–96
(VERTICAL SCALE: LOGARITHMIC 1980–96 = 100)



by the real gross domestic product for the corresponding quarter to get money per unit of output. None of the data were seasonally adjusted. For consumer prices I used the consumer price index for Mexico (base: 1994 = 100). To make the two series comparable, I expressed both as percentages of their average values for the period as a whole. The vertical scale is logarithmic, so that equal distances record equal percentage changes.

Figure 11 shows that money and inflation obey the same rules in Mexico as in countries Milton and Rose Friedman examined in 1980 and 1992. Furthermore, the chart indicates that M1, despite possible weaknesses as a short-term predictor of nominal income and other variables, is a good long-term predictor of inflation in Mexico. One of the most interesting aspects of Figure 11 is the marked change in the behavior of money and prices that occurred after the first quarter of 1988. Before 1988, consumer prices were higher in relation to the stock of money per unit of output than would be suggested by the relation for the entire 16.5 years plotted, although the rates of growth shown by the slopes of the lines were nearly the same much of the time. I believe this difference might be partly explained by effects of inflation expectations in a period of rapidly rising prices and rapid growth in the stock of money.

After the new stabilization program began in 1988 there was a sharp slowing in rates of growth of both M1 BIS per unit of output and consumer prices. The fit between the two lines also was much closer. Some economists might call the break in the slope of the money/output line a regime change. It suggests that the Banco de

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México operated by a different set of rules after 1988 than the ones governing its operations before 1988.

Between the second quarter of 1991 and the end of 1994, consumer prices were lower in relation to money per unit of output than the long-term relation between money and prices would have predicted. I suspect this may reflect the influence of the controlled exchange rate on prices of imports and import-competing Mexican goods that kept the overall index lower than it otherwise would have been (as argued in the discussion of Figure 2). The upward shift of consumer prices after the devaluation is also consistent with that hypothesis.

Banco de México economists who replotted Figure 11, substituting the monetary base for M1 BIS, found that the monetary base was even more closely related to consumer prices than was M1 BIS. This is an extremely interesting result because intuitively one would expect that a monetary aggregate, such as M1 BIS, in the hands of the public would have more influence on consumer behavior, nominal incomes, and prices than would the monetary base. The Banco de México economists view M1 as subject to erratic changes in demand that make it less suitable than the base as a predictor of inflation or as an operating target. The close relation between prices and the monetary base over a long period that they found is potentially very good news for Mexico.

The Banco de México clearly succeeded in slowing the rates of growth of money and prices after early 1988. That raises the question of whether this success in slowing inflation resulted from pegging the peso to the dollar or resulted in spite of the pegging policy. I argue in the following section that the success of the disinflation policy between 1988 and 1994 resulted in spite of the pegging policy, not because of it.

International Capital Flows

Two main concerns stand out in the rapidly growing literature on capital flows. Both played large roles in the Mexico peso crisis. The first is a common belief that capital inflows cause "real exchange rate appreciation" in emerging economies. The second concern is a fear of sudden reversals in the capital flow if residents or foreign investors are frightened by political developments or other shocks to their expectations. Whatever the problems presented by capital inflows, governments of countries like Mexico usually prefer inflows to outflows. But selective controls over capital transfers of residents and foreigners alike have become increasingly porous and burdensome to maintain.[19]

[19]See Mathieson and Rojas-Suárez (1993: 8–21) for compelling evidence on this point.

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The term, "real exchange rate appreciation," is a curious one. The real exchange rate for Mexico, for example, is commonly defined as the nominal exchange rate in the market today adjusted for changes in the difference between U.S. and Mexican inflation rates that have occurred since some base period. Real peso appreciation, therefore, would result from Mexican inflation outrunning U.S. inflation, according to that definition (Arndt 1994). But that definition camouflaged what was actually happening in Mexico and numerous other countries between 1989 and 1994.

Rather than being something strange and mysterious, the tendency of prices to rise in a capital-importing country, with a fixed or nearly fixed exchange rate, is merely the old gold standard equilibrating mechanism at work. As dollars [gold ingots] flow in, the central bank issues more local currency than it would if it did not have to react to the dollar inflow. An increase in the growth of the money stock eventually increases nominal income and prices in the capital-importing country. That, in turn, induces people there to import more foreign goods and to export less of their own products. If the nominal exchange rate is prevented from adjusting to the capital inflow, market adjustments must take another form—increasing prices in the capital-importing country relative to prices in capital-exporting countries. In other words, real exchange rate appreciation occurs.

Real exchange rate appreciation in Mexico in the early 1990s resulted also from revisions of Mexican and foreign investors' expectations regarding relative risks and returns from investing in Mexico rather than elsewhere. The announcement of the structural reforms, the evident competence and confidence of the stabilization program's architects and managers, the dramatic fall in inflation from 1988 to 1989, and the Banco de México's shift to independent status within the government all combined to make Mexico look like a more attractive place to invest. If the bank had not been obliged to prevent the nominal exchange rate from adjusting to the increase in demand for Mexican capital assets, by buying dollars, the peso probably would have appreciated. To put it another way, the peso price of dollars would have fallen. Mexican exporters would have worried about their ability to compete in foreign markets, but Mexican workers and business people would have been able to buy foreign air conditioners, computers, and trips to New York for fewer pesos than they could have before. That sort of real exchange rate appreciation is far more beneficial than real exchange rate appreciation caused by a rising price level in Mexico.

Moreover, by not permitting the peso/dollar nominal exchange rate to appreciate when the demand for Mexican capital assets rose, the

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pegged exchange rate made it possible for foreign investors to buy Mexican assets at lower dollar prices than they otherwise would have had to pay. The pegged exchange rate provided a subsidy to foreign purchasers of Mexican assets during the years of the large capital inflows.

Hot Money

This brings us to the second major concern over capital inflows, the fear of sudden outflows. In retrospect, it is now clear that not all Mexicans and foreign investors in Mexico actually did expect the peso/dollar rate to hold indefinitely, despite what they may have been reading in the financial press. The purchases of $30 billion worth of Tesobonos (dollar-indexed securities) by Mexicans and foreigners provide some evidence of that. Furthermore, the skeptics, whether they were Mexicans or foreigners, were able to move with lightning speed when they decided it was time to abandon ship.

Some investors will react more quickly to new information than will others, even in highly efficient markets. That statement is not meant as a criticism of the way Mexican financial markets operated in 1994 but as a compliment to those investors who recognized significant information and acted on it without delay. Mexican investors, in particular, had more at stake than did many of the foreigners who had recently invested in Mexico, and they had direct experience that some others had not. They had seen devaluations before. More than once. That should be enough to make anyone more nimble.

In many countries whose highly regulated financial markets formerly made it inconvenient for residents to invest abroad, residents nevertheless found ways to hold some of their assets in other countries or in the currencies of other countries. Dollar assets, including U.S. currency,[20] were and are much favored as protection. Financial innovation and the freeing up of global capital markets have made switching the currency denomination of assets more convenient for residents of emerging market economies and more difficult for authorities to control. That is a permanent change which certainly reduces the power of governments and international financial institutions to control exchange rates.[21] For these and other reasons, more and more econo-

[20]Richard Porter and Ruth Judson (1995), at the Board of Governors of the Federal Reserve System, estimate that between 50 and 70 percent of the stock of U.S. currency is now held outside the United States.

[21]For authoritative IMF surveys of the evolution of financial markets and instruments that threaten to reduce the power of governments and central banks to regulate exchange rates, see Goldstein et al. (1993) and, Goldstein and Folkerts-Landau (1993, 1994).

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mists are coming around to the view that attempting to manage exchange rates is an exercise in futility (see Obstfeld and Rogoff 1995).

Holding assets in other countries, or in the currencies of other countries, for protection against domestic inflation, regulation, taxes. or political instability is not costless. There are opportunity costs and some risks in holding wealth abroad instead of at home where investors and entrepreneurs may have special knowledge of investment opportunities they otherwise could exploit. Thus, people are quick to repatriate their financial wealth when they believe the fundamentals are improving at home. But they may be just as quick to send it out again if they think the fundamentals are deteriorating.

The 1994 End Game

In 1994, the capital account inflow shown in Figure 3 fell rapidly toward below zero from its first-quarter peak. After each outbreak of rebellion or assassination or other political shock during that awful year, Mexican and foreign investors exchanged peso assets for dollars. The Banco de México then had the problem of keeping the exchange rate within its target bands in the face of capital outflows by selling foreign exchange from its reserves.

According to a table of daily exchange reserve levels and daily exchange-market interventions in Anexo 5 of the 1994 annual report, the Banco de México bought dollars on 15 of the 30 trading days between January 3 and February 11, 1994, accumulating $4.18 billion in that period. These interventions, combined with minor operating transactions and valuations of non-dollar reserves, brought total international reserves to a peak of $29.228 billion on February 15. There were no more interventions until March 9, when the managers of the account sold $300 million, the first of many sales to come in the rest of the year.

Between March 9 and April 21, the bank sold dollars almost every day for a total of $11.1 billion. On the biggest day, April 20, the bank sold nearly $1.2 billion. From then until June 23, there were no interventions (except for a sale of $70 million on June 7). A burst of exchange sales in June and July took nearly $3 billion more out of the stock of reserves, bringing the cumulative net reserve loss for the year through July 21 to $9.9 billion. After a period of relative calm in exchange markets, November sales took out another $3.4 billion.

When the Zedillo administration came into office in December, total exchange reserves amounted to $12.5 billion. The Banco de México had a very small stock of ammunition for fighting off what some observers called a "speculative attack" on the peso in December. In fact, if the *net* reserve position is considered—stated reserves

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minus the potential dollar liability presented by the $30 billion of Tesobonos—reserves on hand for the battle were not merely small, they were negative. Astute speculators could see that.

Reflecting on this final battle, Gil-Díaz and Carstens (1996b: 20) wrote,

> A massive speculative attack on a currency whose authorities are committed to maintain a band can not be resisted, certainly not in the present environment where the speed and amount of resources that move everyday in world financial markets quite simply overwhelm authorities. When it is realized that intervention in the 1994 Mexican case involved 25 billion dollars in reserves plus 30 billion in the issuance of dollar-linked government paper, Tesobonos, one understands the orders of magnitude involved.

IMF economists reviewed the Mexico crisis from the perspective of the speculative attack literature. They defined a speculative attack on a fixed or managed exchange rate as "a sudden and massive restructuring of portfolios in which market participants attempt to reap gains or prevent losses from an expected change in the exchange rate regime." One of their most interesting comments was that, "It was once thought by economists that speculative attacks were market pathologies that would not be present or possible in healthy markets." To the contrary, they said, recent research indicates that a speculative attack is a market's rational response to a perceived inconsistency in economic policies (Folkerts-Landau and Ito 1995: 70–79). In that statement, they echoed the 1950 Friedman analysis and the recent Bordo and Schwartz statement quoted earlier.

In other words, people in financial markets continually watch the monetary authorities of their own country and other countries to see whether they are trying to do things that cannot be done, or that cannot be done much longer. Currency speculators, investors, and economists may not be very good at forecasting exchange rates in a free market, but they have become highly skilled at predicting when a government or central bank may decide to give up on trying to hold an exchange rate at a particular level or within a specific band. When they see symptoms of unsustainable policies they enter into foreign exchange transactions that may ultimately hasten the change in exchange rate targets. The markets now offer them a great menu of derivatives and other instruments for speculating or hedging against changes in governmental exchange rate policies. It is safer and more lucrative for speculators and investors to bet against the judgment and determination of a few officials in governments and central banks, whose resources are limited, than to risk getting out of step with

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thousands of their own kind linked together in trading rooms scattered around the globe.

In the Mexico case, there was no way transactions on the scale of the interventions described above could go unnoticed. Knowledgeable people in financial markets could see when the capital inflow became an outflow, partly because of the political shocks marring 1994. They could see when the Banco de México entered the market to support the peso by selling dollars.

People in the market also could see the change in direction of sterilization operations on the other side of the Banco de México desk that Governor Mancera described in his *Wall Street Journal* article. As we saw earlier, the bank reduced its net domestic credit by 36.7 billion pesos between December 1989 and December 1993 to partially sterilize its purchases of exchange reserves, in order to keep the monetary base from growing at an inflationary rate. To mitigate the deflationary impact of exchange sales in 1994 (Mancera called it "demonetization"), the central bank increased domestic credit. That can be clearly seen by the dashed line in Figure 4.

Between December 1993 and November 1994, therefore, the Banco de México increased domestic credit by about 35.4 billion pesos, in partially sterilizing exchange sales of about 36.2 billion pesos and attempting to keep the monetary base on an appropriate track. That policy confused some experts who argued that the increase in domestic credit signaled an easing in monetary policy and thus stimulated speculation against the peso. The IMF, for example, implied that the bank contributed to "internal imbalances" by expanding its domestic assets when it sold foreign exchange reserves in early 1994. "This policy maintained relatively low interest rates early in the year when industrial country interest rates increased" (Folkerts-Landau and Ito 1995: 54).[22]

Some investors and commentators have complained that they were misled by the lack of current reports of Banco de México exchange reserves in the months leading up to the devaluation. Here, too, I believe the resourcefulness of market participants in ferreting out valuable information has been widely underestimated. It is true that the bank reported the amount of exchange reserves it held only three times per year: in March, October, and November. That is the basis for the charge that the Mexican authorities misled investors by concealing crucial information on the state of its exchange reserves. Nevertheless, observant people in the market did not need official reports to know that the stock of reserves was a finite amount and one that must be

[22]Gil-Díaz and Carstens (1996c: 22–24) examine this issue at length.

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shrinking rapidly under the stressful conditions prevailing in 1994. According to Gil-Díaz and Carstens (1996b: 25–26), "Banco de México watchers" in domestic and foreign investment banks were able to figure out on a daily basis the amount of international reserves held by the bank with amazing accuracy. The bank provided all the elements needed for this exercise. These same outside analysts also knew that the Tesobonos were a very large potential dollar liability for the defenders of the exchange rate peg. There was only one way for the peso/dollar rate to go unless the Banco de México somehow could acquire many more dollars to use for its peso-support operations.

Although a resupply of dollars from other governments, central banks, and international financial institutions might be negotiated, rescue was not immediately in prospect when the run against the peso began. Furthermore, these rescue dollars, if they came, would have strings on them in the form of constraints on Mexico's freedom to maneuver and an obligation to repay. The prospective net exchange-reserve stock of the Banco de México, therefore, was not likely to be large enough to frighten currency speculators or to hearten Mexican and foreign investors who were trying to decide whether to stay in peso assets or to fold. There was no way to avoid devaluing in the face of the monetary forces reviewed here.

The government and the Banco de México also had no way of knowing what new exchange rate target would be considered credible by market participants if they were to set one. On December 20, 1994, Mexico devalued the peso by 15 percent. That did not calm the markets. On December 22, the authorities announced their decision to allow the peso to find its own level but also promised to influence that level through various policy changes and the use of outside help from the United States and Canada.

The crowning irony is that defeat in the battle to control the peso/dollar exchange rate came not because the bank was lax in its monetary policy when capital flowed out in 1994, but because it was so faithful to its exchange rate target when capital flooded in during 1990–93. The exchange rate peg that was supposed to curb inflation continually threatened to do the opposite. To keep the peso from rising against the dollar required large purchases of dollars and strenuous efforts to offset those purchases with sales of Mexican securities in order to keep the dollar purchases from inflating the monetary base. At best, those sterilizing efforts were only partially successful. Therefore, capital inflows caused the monetary base and the money stock to grow more than they would have if it had not been necessary to defend the exchange rate peg.

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In its 1995 annual report, the Banco de México noted, "The floating exchange rate regime [after December 1994] has had profound implications for the conduct of monetary policy. With this regime, the Central Bank acquires control over the monetary base of a sort not seen in the case of injecting or subtracting liquidity for an obligatory intervention in the exchange market" (Banco de México 1996: 5). With a floating rate regime the central bank modifies the base by discretionary management of its net domestic credit.

Lessons

Many economists and both Mexican and foreign investors were confident that the widely acclaimed policy of pegging the peso to the dollar would provide a strong defense against inflation while practically eliminating the exchange rate risk and the credit risk of shifting from dollar assets to peso assets. They found they had been wrong on all three counts when the peso was allowed to float in December 1994.

The peg installed in March 1988 may have had some beneficial effects on inflation expectations at first. But those benefits proved to be short-lived. They soon were outweighed by unforeseen costs, one of the worst of which was that preventing the peso/dollar rate from adjusting to the increased demand for Mexican capital assets in 1990–93 distorted price information by acting like direct controls on a major class of goods and services. When the peso was allowed to float, previously suppressed prices suddenly increased at a shocking rate, carrying interest rates up in their wake. The sudden large changes in exchange rates and interest rates wreaked havoc on Mexican businesses, consumers, and banks, whose plans and contracts in both pesos and dollars had been based on expectations of a much more stable financial environment. Anyone who owed dollars to someone else inside or outside of Mexico suddenly found that he would need many more pesos to meet his dollar obligations than he had expected when he borrowed the dollars.

The sterilization practiced by the Banco de México before the devaluation and the gradual widening of the target band kept the damage from being as bad as it might have been. But sterilization involved much churning in Mexican financial markets and required them to absorb large quantities of Mexican government securities at a time when the services of those markets and institutions were badly needed to allocate capital for private investment.

A final devastating consequence of the peso devaluation came when foreign investors doubted the ability of both the government and private borrowers in Mexico to fulfill their dollar obligations in early

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1995. That lack of confidence converted an exchange crisis into a potential default crisis and virtually extinguished the availability of foreign investment capital. The fears of a governmental default proved to be unfounded, but they were painful for Mexico while they lasted. With the help of the financial package put together by the governments of the United States and Canada, the IMF, the World Bank, and the Interamerican Development Bank, the Mexican government greatly reduced its dollar obligations, including the Tesobonos, in the first half of 1995 (Banco de México 1996: 41–43).

The Banco de México did valiant work in fighting inflation after 1987 in the face of the many distractions and complications brought on by the attempt to control exchange rates. But every action taken by the bank was intensely scrutinized by economists and financial market participants more for what it might reveal about the probability of a large, sudden change in the exchange rate target than about the probability of small, gradual changes in inflation, economic growth, interest rates, and exchange rates. An official devaluation or a revaluation could mean almost instant poverty or instant riches, depending on where an investor or speculator was standing in the market when it was announced.

Prospective large-scale external support for the peso, such as the financial package put together by other governments, central banks, and international financial institutions in 1995, could not prevent the crisis in 1994. Support is unlikely to be available on such a scale again, given the budgetary and other pressures on governments to restrict their activities.

The structural reforms surely could have produced more benefits in real income and employment for the Mexican people if the effort to stabilize the price level had been more successful. The lack of a stable price level in the 1980s and the first half of the 1990s and the wracking business recession that followed the 1994 devaluation made it extremely difficult for entrepreneurs, investors, workers, and officials to make long-run decisions. Critics of the government unfairly blamed the costs of the monetary shocks on the structural reforms and on the opening of Mexico to international competition with NAFTA. "Neo-liberalismo" became a bad word in some Mexican circles.

Future Prospects

Mexico has assets in its resources and people that should enable it to produce a higher real rate of return on invested capital for years to come than can be obtained in the more highly developed economies

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of the United States, Japan, and Europe.[23] To do so, however, obviously will require adapting institutions and policies to the changing world financial system.

Two compelling features of the international financial system affecting Mexico will persist: (1) large, sudden capital flows, in and out, will occur, as Mexican and foreign investors continually revise their estimates of risk-adjusted returns in light of changing political and other conditions in Mexico and elsewhere; (2) investors and speculators will have the means and the skills to overwhelm governments and central banks that try to maintain exchange rate targets that market participants think are unsustainable. Both of those features of the financial environment will limit the power of the Mexican or any other governments and central banks to control exchange rates. International financial markets provide a strict grading system for appraising the management of countries as well as companies. Therefore, a nation that hopes to attract capital from others, or to induce its citizens to keep their capital employed at home, must honor the norms of global capital markets.

Economists and politicians are irresistibly tempted to recommend new, complex, costly arrangements for improving international monetary relations and institutions. IMF plans for expanding its borrowing and lending powers and for other measures designed to cope with future Mexico-style crises are a good example of that temptation (Schlesinger 1996). It seems more likely to me, however, that countries such as Mexico will build on their own experience to improve the performance of institutions they already have, in particular their central banks.

Experienced central bankers north and south of the United States have recently pointed out some directions the evolution of central banking may take in their countries. For example, John W. Crow, a former governor of the Bank of Canada, argues that a central bank needs a clear mandate to maintain domestic price stability. Variation in market-determined exchange rates will then provide a margin of adjustment and stabilization when differences in behavior of national economies arise (Crow (1996: 167–75).

Gil-Díaz and Carstens (1996a: 37) have expressed somewhat similar views of the future of Mexico's monetary institutions. In an early version of their major study of the 1994–95 peso crisis, they wrote, "We feel that the monetary arrangement presently within our reach is an independent central bank under a floating exchange rate, prefera-

[23]For some convincing arguments as to why this statement should be true, see Olson (1996).

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bly a freely floating one, to prevent or diminish the size and ultimate success of speculative attacks."

Pegging the peso to the dollar was, in effect, a rule or mandate for governing the Banco de México that was expected to build credibility for Mexico's stabilization program. But that rule proved unreliable in the face of the capital flows and political shocks that Mexico experienced in the 1990s. It proved to be directly in conflict with the Banco de México's constitutional mandate to maintain a stable purchasing power for the peso.

Mexico can adopt a more efficient rule for building credibility for the peso at home and abroad. It can follow the example of New Zealand, by establishing a covenant between the government and the central bank making a stable domestic price level the one and only goal of the monetary authorities. Furthermore, it can make the authorities accountable for achieving that goal. The bank is amply supplied with the technical skills and tools necessary for success under a zero-inflation rule. This course offers the great advantage of building credibility through requiring the bank to do something it can do rather than by requiring it to do something it cannot do.

Maintaining a stable domestic price level in Mexico would not by itself guarantee a stable exchange rate. The exchange rate will be influenced by many forces outside of Mexico, in addition to whatever Mexico does with its national economic policies. But a stable domestic price level in Mexico should greatly increase stability of the peso/dollar exchange rate. Stability of the exchange rate would be further enhanced if the United States, too, would replace discretion with a rule in conducting its monetary policies. That obviously is not something for Mexico to determine.

Derivatives and other financial market innovations provide vehicles for speculators to make life difficult for central bankers who try to control exchange rates. But we should not underestimate the value of derivatives for hedging risks of many sorts. Arguing that futures markets are an efficient mechanism for managing and distributing risks and for determining prices and exchange rates, the Banco de México has been actively facilitating their development (Banco de México 1996: 202–15). The Chicago Mercantile Exchange has provided a market for Mexican peso futures since April 1995. In November 1996 Mexico's National Banking Commission inaugurated Mexico's first Derivative Stock Exchange (Mex-Der). Peso futures contracts to be traded on this exchange will enable Mexican and foreign firms to lock in a certain exchange rate or interest rate for a set period of time to cover import or export transactions that must be settled in pesos and dollars (Alonso 1996: 26–27). These derivatives and other

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financial innovations should confer large benefits on businesses and investors who use them to hedge against the exchange rate risks that will remain after governments and central banks stop trying to manage the unmanageable.

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The Mexican Peso Crisis: Comment on Meigs

Roberto Salinas-León

James Meigs's (1997) essay constitutes a valuable contribution to the vast literature on the origins and lessons of Mexico's peso collapse in 1994. An adequate response to Meigs's complex argument would require a self-contained effort.[1] My response concentrates on two claims about the peso collapse: (1) if Mexico had implemented a floating regime in 1992, "there would have been no peso crisis"; and (2) given the monetary forces in the period 1991–94, "there was no way to avoid devaluing" under a pegged exchange rate. Both propositions are ambitious, but underestimate the fundamental role of global capital flows in the context of inconsistent public policy. The post-1994 experience with a floating exchange rate underscores that objection.

A Novel Argument

Meigs's argument is novel. Unlike contributions that focus on policy developments in 1994, Meigs locates the causal origins of the peso crisis in the "strategic decision" to peg the peso to the dollar in 1988. The exchange rate stabilization plan was part of a structural reform program that helped reduce inflation from 159 percent in 1987 to 7 percent in 1994. However, Meigs claims that the plan contained the seeds of its own destruction. The significant purchases of foreign exchange during the capital inflow episode of 1991–94 created unsustainable inflationary pressures that made the economy highly vulnerable to "destabilizing speculation." The divergence in price levels between Mexico and the United States in the context of a crawling

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[1]For my full version on the peso collapse, see Salinas-León (1996).

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peg system rendered the exchange rate regime unsustainable in the face of unforeseen shocks. By the end of 1994, devaluation was inevitable.

Thus, Meigs believes that if the Carlos Salinas administration had adopted a floating regime in 1992, at the height of massive capital inflows, the crisis could have been avoided. A market-determined rate would have freed the central bank from pursuing a predefined exchange rate target and would have led to "an eventual adjustment of the exchange rate" in accordance with differences in consumer price levels in Mexico and the United States. Moreover, the 1995 inflation would have been nipped in the bud.

Meigs makes an important claim, but the crucial issue is whether a floating regime, by itself, would have been capable of withstanding policy errors that others have identified as the central causes of the peso collapse. A principal virtue of a floating regime is that it acts as a transparent feedback mechanism for policy decisions. Mistakes are punished with capital outflows, which manifest themselves in instant depreciation; and, by the same token, positive developments are rewarded with capital inflows, which generate a stronger exchange rate. Those results are independent of the spread in inflation differentials between countries or the evolution of the balance of payments. In a regime of floating exchange rates, what are relevant are the movement of global capital flows and the institutional basis of prolonged inflows of foreign private investment. Those concepts seem underappreciated in Meigs's analysis.

Capital Flows and Floating Exchange Rates

According to Meigs, in a monetarist framework, the increasing divergence in price levels between Mexico and the United States meant "the exchange rate must eventually adjust in order to restore purchasing power parity of the peso." This is the familiar argument that the differences in inflation rates in the period of exchange rate stabilization foreshadowed an inevitable adjustment of the parity. However, there are reasons to think that purchasing power parity (PPP) calculations comparing inflation differentials between trade partners constitute an unreliable model for short- and long-run nominal exchange rate behavior.[2] The analysis Meigs advances is inconsistent with the exchange rate environment that has developed in the post-devaluation period.

[2]For an excellent assessment of the misgivings with PPP models as accurate exchange rate predictors, see J.P. Morgan's Emerging Markets Research (1997).

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Meigs assumes that, in a monetarist framework of a floating exchange rate regime, the behavior of the peso/dollar parity in 1992 would have adjusted in line with the spread in purchasing power parity. That assumption is gratuitous. Otherwise, a similar adjustment would have occurred in 1995, under a floating exchange rate, in accordance with a spread of nearly 49 percentage points in consumer prices between Mexico (with an inflation rate of 51.9 percent) and the United States (with an inflation rate of 3 percent). Yet, a classic case of exchange rate overshooting occurred in the wake of a brutal collapse of confidence in the peso and a massive suspension of private capital flows. The result: a peso depreciation of over 100 percent, from 3.5 pesos to 7.3 pesos to the dollar.

An example in the opposite direction is supplied by Mexico's experience with a floating regime in the period 1996–97. During that time, the strength of economic recovery has restored confidence and diminished country risk, thereby helping Mexico to once again attract foreign capital. As new private capital inflows have flooded Mexico, the nominal exchange rate has remained remarkably stable, thereby generating fears of an appreciation of the real exchange rate and secret interventions on the part of the central bank to sustain an "artificial" parity.

Mexico's strict monetary policy and fiscal discipline have revitalized the investment climate. If that trend continues, the peso/dollar parity is bound to remain stable, notwithstanding inflation differentials and occasional "destabilizing speculation" linked to political factors or terms-of-trade shocks.

Moreover, the argument that Mexico can become a greater exporter through devaluation is specious. Indeed, in the period 1970–96, leading export nations observed a strong association between real appreciation of their currencies and a large increase in their exports:

- In Chile, real appreciation was 40 percent and the increase in exports 255 percent;
- In South Korea, real appreciation was 36 percent and the increase in exports 331 percent;
- In Japan, real appreciation was 78 percent and the increase in exports 15,509 percent;
- In Hong Kong, 12 years of parity stability coincided with a 500 percent increase in exports;
- In Mexico, despite the 1994 devaluation, real appreciation of the peso reached 36 percent in the relevant time frame, while exports grew 202 percent.

A fundamental lesson embodied in those examples is that other factors must be assessed into competitiveness equations—for instance,

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levels of worker productivity, capital flows, the regulatory environment, the impetus of reform, import-led modernization, and, most important, trade liberalization.

Meigs contends that Mexican citizens, unaware of the finer intricacies of monetary policy, would substitute imports for domestic goods because imports were now cheaper due to Mexico's higher inflation rate and the pegged exchange rate. Yet, an important survey conducted by the Center for Economics of the Private Sector, in November of 1994, revealed that 80 percent of 450 polled companies considered the prevailing pegged rate consistent with predicted domestic sales for 1995. The same survey found that businesses ranked an overvalued peso seventh among the factors deemed as obstacles to export competitiveness—far less important than access to information or regulatory costs.[3]

In sum, Meigs seems to underestimate the fundamental role of capital flow movements in his claims about the peso crash. It is arguable that the Salinas government erred by not moving to a float sooner. Nevertheless, the real culprit is bad policy, which is the source of exchange rate volatility under both a pegged and floating regime. As stated above, 1995 represents a good example: mixed signals and wishy-washy public policy on the part of the Ernesto Zedillo administration, including hints about fashioning policy in accordance with the perverse criteria of maintaining balance of payments equilibrium, led to a drastic weakening of the peso.[4]

A Dubious Counterfactual

In short, my proposition is that Meigs is right (on the need for a floating exchange rate regime) for the wrong reasons (such a regime

[3]Meigs alludes to the findings of Dornbusch and Werner (1994) in support of the claim that there was no way to avoid devaluation in 1994. I believe Meigs does himself a disservice by citing that study. The claim that Dornbusch "correctly predicted" the peso devaluation is popular, but false. Dornbusch never predicted the peso collapse of 1994; he recommended the devaluation as a desirable tool of policy: "In Mexico, a sad ending lies ahead unless the currency is devalued." For the full story, see Salinas-León (1997a).

[4]In 1995, the Zedillo government was forced to revise original projections for the exchange rate on four occasions and to acknowledge that the change in the exchange rate regime underestimated the "virulent and violent" reaction of investors and savers to a sudden shift in the parity. It is significant that the unprecedented stampede of capital flight that caused the collapse of the former exchange rate regime took place not in response to a "perceived inconsistency in economic policies," as Miegs suggests, but in the immediate aftermath of the decision to widen the upper limit of the band. This suggests that the resolve to depreciate the peso in the interest of erasing substantial red ink in the external accounts was the fundamental source of the "destabilizing speculation" that devastated the semifixed exchange rate regime. This in not the place to argue the matter, but the point is that the administration seemed under the impression that the autonomous change in the exchange rate regime would not send everyone and anyone running for cover—despite warnings to the contrary by former Minister of Finance Pedro Aspe.

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would have avoided the 1994 crisis). If, counterfactually, the Zedillo administration had accompanied the original decision to modify exchange rate policy with a global program of new privatizations (including the state-owned oil industry) as well as a new round of foreign investment liberalization, the results would have been radically different. Rather than the collapse of what was once hailed as a model of emerging market reform, Mexico's nascent market-liberal system would have been rejuvenated. If, by the same token, the recommended adoption of a floating regime had occurred in 1992, in the absence of a strong background of structural reforms, capital would have fled en masse, engendering an avoidable financial collapse.

Indeed, it has become commonplace to characterize the 1994 peso collapse as the first crisis of the 21st century. That interpretation heeds the observation that technological advances in the world of finance have rendered the movement of private capital flows highly sensitive to policy decisions. A fundamental lesson of the peso crisis is that emerging markets should treat capital inflows as transitory and capital outflows as permanent. That risk-management strategy failed in the months preceding the peso crash, as the government bet on a return of foreign investment in short-term instruments that never materialized (Summers 1995). The Zedillo administration calculated an "expected exchange rate" 12–15 percent higher than the rate that prevailed at the time the upper limit of the band was increased. Although the government did not officially recognize the peso devaluation until the first days of 1995, the actual devaluation occurred on December 22, two days after the original modification, when the collapse of market confidence created a rush for dollar assets. The flight from the peso, equivalent to $5 billion, forced authorities to float.

Consequently, it seems adventurous to claim that the simple existence of a floating exchange rate regime in 1992 would have precluded the advent of the 1994 financial crisis. The capital inflow episode that Meigs carefully details would have caused a large appreciation of the peso—and not the modest adjustment forecasted by comparisons with consumer price indices. Conversely, a floating regime in 1994 would not, by itself, have constituted a sufficient condition to avoid the peso collapse. Indeed, the claim that a floating regime would have ruled out a crisis represents an implausible counterfactual. The conditions for generating such an unwelcome development depend far more on capital flows and therefore on the nature of the entire body of public policy.

Exchange Rate Incoherence

Notwithstanding the commitment to a floating regime, the administration's rhetoric on the need to avoid exchange rate overvaluation

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has generated a credibility gap in the area of exchange rate policy. This is an important point, for as Meigs correctly proposes, there are several steps authorities can take to enhance the quality of an independent monetary policy designed to achieve price stability. Unfortunately, exchange rate incoherence threatens to undermine the prospects of long-term monetary stability.[5]

Many economies enjoy the benefits of stable currencies and a stable price system, yet combine anti-inflation monetary policy with the flexibility of a floating exchange rate. The cost of the latter is potential volatility, which can only be diminished with credibility in the future direction of monetary policy. In other words, if savers know that the central bank will not sway from its anti-inflation course, and know this on the basis of precedent, there is no need to rush to foreign currencies to protect the value of domestic earnings. This is a hard and time-consuming task, but recent developments seem to suggest that the Bank of Mexico is finally regaining a measure of credibility in financial markets.

The Bank of Mexico categorically insists that a floating regime will be followed, and that monetary policy will be anchored on targets for domestic credit expansion. It is surprising, however, to find authorities at the Ministry of Finance insisting that they will not allow the peso to become "overvalued again." However, to say that a float will be maintained and also say that the exchange rate will not become overvalued embodies a fundamental tension. The former claim entails that the parity will be what it will be—that is, what the foreign exchange markets dictate in accordance with supply and demand, regardless of whether this results in an appreciation or depreciation of the peso. The latter claim, however, implies that the government, not the market, should set the exchange rate. In that case, politics, not economics, is the dominant force.

The stability of the peso during the period 1996–97 has generated the illusion of a problem with real appreciation of the currency and the need for peso depreciation in the interest of export competitiveness. The failure of the parity to adjust to differentials in price levels between Mexico and the United States has led observers to fear secret interventions in the foreign exchange market or to recommend active depreciation. That state of confusion is encouraged by the Zedillo administration's own simplistic abuse of PPP formulae to estimate annual levels for the peso/dollar parity, despite simultaneous claims that under a floating regime it is impossible to predetermine a correct level for the exchange rate.

[5]The remainder of this section is adapted from Salinas-León (1997c).

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Pathological fear with a strong peso led authorities to formalize a program for the systematic accumulation of international reserves, in order to short circuit a potential "accelerated appreciation of the currency that could diminish the profitability of tradable goods." That is a fancy way of saying that the authorities will keep some of the investment coming in so that the peso does not revalue, and in turn keep exporters happy, or less concerned about too much investment coming into an undercapitalized economy. Yet, accelerated appreciation is a natural market-driven process in the context of capital inflows following successful stabilization measures.

Thus, observers who suspect secret interventions to sustain the peso beyond levels dictated by inflation differentials have it backward. If the central bank were not amassing dollar reserves, the parity would now be much closer to 7 than 8 pesos to the dollar. The contradiction is obvious: avoiding a market-driven appreciation of the peso is inconsistent with claims that there is no predetermined level of the parity under a floating regime (see Salinas-León 1997b).

Indeed, the irony is that, despite the existence of a floating regime, there is a strong consensus that Mexican authorities should undertake measures to "eventually adjust the value of parity," in order to remove systematic appreciation and avoid the external sector from falling into a deficit. The current fashion, of course, fails to mention that a sure way to accomplish those lofty macroeconomic goals is to suspend all foreign investment or implement a policy of maxi-devaluations. Both options involve depressing the domestic sector in favor of export earnings, with no basis in a more modern productive process. The numbers would thrill the consensus, although the cost for the real economy would be devastating.

The causes and consequences of Mexico's 1994 peso crisis constitute a fascinating topic for policy discussion, and will surely continue to engage policy analysts and academics. The principal lesson of the crisis is obvious: leave the parity alone! On that point, I believe, Meigs and I fully agree.

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Deposit Insurance Pricing: The Hidden Burden of Premium Rate Volatility

Sherrill Shaffer

The virtual elimination of the federal deposit insurance premium for the majority of banks in 1995 and 1996 has been widely heralded as a boon for bankers. Certainly it represents welcome relief from assessment rates exceeding 20 basis points in recent years. And this relief comes without apparent risk, as the FDIC's Bank Insurance Fund (BIF) now stands above the FDICIA-designated benchmark of a solid 1.25 percent of insured deposits.

What's wrong with this picture? In short: volatility. The rapid recapitalization of the BIF resulted from an excessive premium rate that constituted an overreaction to previous losses. Lowering the premium essentially to zero is likewise an overreaction, to be followed by another sharp increase whenever the banking industry enters the next phase of the business cycle. This ping-pong pattern results from the policy of holding the BIF at a fixed proportion of insured deposits.

Volatility is costly. Moreover, insurance typically has the potential to eliminate—or at least greatly reduce—this source of volatility. As we review existing regulations and policies for opportunities to reduce the regulatory burden and promote a sound economy, we should incorporate the efficiency of deposit insurance pricing—including its intertemporal component—in that review.

This article presents evidence that the current pattern of deposit insurance pricing may be costing the industry over $1 billion per year more than an alternative policy of stabilizing the premium rate and

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allowing the BIF to serve as a shock absorber for fluctuations in aggregate losses. The additional cost is in the form of risk premiums demanded by investors and uninsured depositors.

Unless there are offsetting benefits, such higher costs correspond to a deadweight loss. Banks attempt to pass on these costs to their customers, including borrowers, resulting in a contraction of credit.[1] This effect is strongest when the costs are highest, which under the current pricing policy occurs during economic downturns. To the extent that market forces prevent the costs from being passed on, the banking sector will find itself simply unable to compete with uninsured institutions in the provision of credit.

Two alternative suggestions are presented to reduce this costly volatility: stabilizing the premium rate over time, or using a corporate income tax surcharge on banks as the means of capitalizing the BIF. Either approach could incorporate risk-based interbank variations in the assessment rates.

The Potential of Insurance

The potential economic benefits of any insurance are twofold: diversifying losses across institutions or policyholders (cross-sectional smoothing) and diversifying losses over time (intertemporal smoothing). In banking, the intended beneficiaries of this smoothing are considered to be the small depositors. It is well understood that such protection comes at a cost, and that depositors themselves share that cost (at least indirectly) as banks pass on some portion of their premium expense to their customers. Depositors give up a small but sure reduction in interest income—or pay higher account fees—to prevent uncertain but potentially larger losses.

A single bank can self-insure to some extent by holding more capital and reserves. This strategy partially diversifies or smooths the impact of portfolio losses over time, but not perfectly so as long as banks can fail. Moreover, self-insurance cannot achieve smoothing across banks, an important dimension contributed by the FDIC.

The fluctuation of aggregate loss rates over time demonstrates that smoothing across banks alone does not completely diversify away financial risk. Federal deposit insurance can be configured to enhance

[1]Ironically, economic theory tells us that the greatest pass-through of higher costs to banks' customers will occur in the most competitive banking markets. This paradox arises because banks' margins are thinnest in competitive markets and are therefore unable to absorb extra costs. At the same time, however, competition from nonbanks that are not subject to the same costs will constrain the extent to which banks can pass on these costs.

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smoothing over time as well, as it originally was (from 1934 to 1950).[2] Varying the premium rate alternately above and below the long-run average loss rate gives up the time dimension of smoothing.

From this perspective, the best premium rate is the one least likely to require change in the future. Over time, the banking industry must pay the full cost of deposit insurance—the proper vigilance of Congress against a net taxpayer subsidy will see to that. Achieving this goal requires the average premium income to equal the long-run average expenses of the deposit insurance fund. A premium rate higher than long-run average loss rates would make the banking industry pay too much for its insurance in an actuarial sense, and eventually would generate strong political forces to reduce the premium (as we have recently seen). Conversely, a premium rate below long-run average loss rates will allow the deposit insurance fund to be depleted over time, ultimately requiring a higher premium rate to maintain its solvency. A premium rate equal to the long-run average loss rate will allow the BIF level to fluctuate from year to year, acting as a shock absorber to intertemporal disturbances in bank failure rates, but could maintain a positive BIF level on average as desired.

The Cost of Rate Volatility

The cost to banks of fluctuating assessment rates can take many forms. Projected cost streams become more uncertain, hindering financial planning. Automated profitability models must be reprogrammed at new premium rates. Fluctuating cost causes profits and net worth to fluctuate, driving up the probability of failure.[3] Banks' shareholders respond by bidding down stock prices to achieve a higher return on equity (ROE) as compensation for their exposure to higher risk. There is also a hitherto unexplored factor, the loss of cumulative portfolio investment income owing to interactions between fluctuating interest rates and fluctuating premium rates. The next two sections estimate a rough dollar cost for each of these last two components, based on previous research in capital markets. We find that both the equity risk premium and the forgone portfolio income may be large under a regime of fluctuating premium rates.

[2]Federal legislation mandating partial premium rebates as a function of annual expenditures was enacted in 1950 and repealed in 1990. Rising loss rates greatly reduced rebates after 1980 and forced their suspension after 1983.

[3]A higher volatility of net worth would measurably increase the probability of failure only for marginally capitalized institutions. On the other hand, this effect would be procyclical since the proportion of institutions that are marginally capitalized will increase during economic downturns.

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Paying the Capital Market

If the BIF is maintained at a fixed target fraction of insured deposits, as current policy requires, then any annual fluctuations in the aggregate cost of bank failure must be passed directly to the banking industry in the form of premium adjustments. Volatility in aggregate loss rates generates volatility in premium assessments, dollar for dollar. This linkage allows a calculation of the cost to the banking industry of the current method of funding the BIF, in comparison with the cost of a fixed-rate plan.

From 1934 through 1995, the volatility of the FDIC's annual operating expenses and losses, measured as a fraction of aggregate bank equity, equaled 134 basis points (b.p.). Correcting for the historical correlation between aggregate loss rates and aggregate bank profitability, we find that the annualized volatility of banks' aggregate ROE would have been 46 b.p. higher under the current pricing procedure than under a fixed-rate procedure.[4] Using estimates by Mehra and Prescott (1985) of annual aggregate risk premiums in U.S. capital markets since 1938, we calculate that the ROE hurdle rate required by investors would be 34.4 b.p. higher under the higher volatility than under a constant assessment rate.[5] In total dollar terms for the U.S. banking industry, this cost of premium rate volatility works out to $1.2 billion per year, based on the aggregate level of banks' equity in 1995.

If instead we use the period since 1980 as a benchmark, similar calculations show that a pass-through of aggregate loss fluctuations would have added 169 b.p. to the volatility of ROE, for an annual industry cost of $4.4 billion. Moreover, other research has found that uninsured depositors similarly demand a risk premium that varies with measurable indicators of bank risk, and this additional risk premium should be factored in along with other costs (see Baer and Brewer 1986, and Hannan and Hanweck 1988).

[4]This increment actually understates the true increase in volatility, because it is calculated under the assumption that historical ROE reflected fixed premium rates, whereas both the rebate policy cited in footnote 2 and the more recent funding procedures imposed a degree of premium rate volatility.

[5]The volatility of individual banks' profits will generally exceed that of aggregate profits because profits are not perfectly correlated across banks. Nevertheless, the risk premia calculated by Mehra and Prescott are related to aggregate volatility rather than individual firms' volatility, so the comparison made in the text above is the correct one. One might also object that many banks are not publicly traded and therefore are not subject to these calculations. However, if the investors of nontraded banks respond rationally to the incentives of wealth and risk, the same rules apply, because alternative investments are available to these investors in the capital markets.

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Some banks can perhaps take steps to reduce the impact of premium rate volatility. However, it is not realistic to think that they could fully insulate their costs or profitability from fluctuations in the assessment rate. Others have similarly noted that the current policy reduces banks' expenses when they can best afford to contribute to the BIF, necessitating a higher premium when banks can least afford it.

For What?

Is there any offsetting benefit to these costs of premium rate volatility? First, a premium rate linked directly to annual expenses might provide an incentive for banks to police each other's risk-taking in an attempt to keep premiums low. This argument should not be lightly dismissed, as the experience of the 1980s has taught us that incentives matter. A question in this regard, though, is whether effective self-policing is possible among more than 9,000 banks scattered around the country. Most bank failures have occurred among smaller banks, which may be more difficult for the industry to monitor in aggregate than the few largest banks. Thus, while the incentive idea is sound in principle, it may have limited practical applicability here.

Second, a thoughtful observer might suspect that varying the premium rate over time could perhaps enable banks to invest more retained earnings during periods of low premiums, and that the earnings on this investment might offset higher premium rates in other periods. But this claim is spurious: the effect over the long run should net to zero, if deposit insurance pays its own way—and can even cost the banks something, as a simple historical example shows.

Assume that banks can invest any excess retained earnings at a market rate. For purposes of illustration, let's use the three-year Treasury bond rate (constant maturities), for which data are reported beginning in 1953. Between 1953 and 1993, the average annual net FDIC assessment rate on commercial banks was 6.123 b.p. of total domestic deposits. Calculate the difference between this average rate and each year's actual rate (which reflects time-varying rebates over most of this period as explained in footnote 2). Invest that difference (along with the accumulated surplus or deficit) at the corresponding year's T-bond rate, where a deficit would correspond to borrowing against expected future earnings. Over this 41-year period, using actual 1953–1993 figures, the average bank would have ended up with less money, by an amount equal to 5 percent of its domestic deposits, under the actual (time-varying) assessment schedule than had a flat 6.123 b.p. rate been assessed each year. Industrywide, based on 1993 deposits, this figure totals more than $100 billion in forgone retained earnings and investments. Had banks invested the additional funds

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in loans (at higher interest rates) rather than Treasury securities, the difference would be even greater.

A Better Way: Stable Rates

Avoiding such costs merely requires holding the premium rate constant. The challenge then is to select the correct rate. Although the FDIC's annual cost of resolving failed banks has fluctuated considerably over the past 60 years, changes in fundamental regulatory, technological, or market conditions that seem to suggest a permanent regime shift in loss rates—whether up or down—have thus far proven transitory over a longer horizon. The high loss rates of the 1930s gave way to the very low loss rates of the 1950s, followed by high loss rates during the 1980s and a subsequent return to low loss rates in the 1990s. Specific causes of each change are apparent after the fact but not beforehand. Thus, for example, the current period of low losses coincides with a long macroeconomic expansion, the implementation of prompt corrective action by federal banking regulators, and more stringent regulatory capital requirements. It would, however, be presumptuous to expect that a period of higher losses will not reassert itself at some point in the future.

Available evidence, taking into account deposit growth and the FDIC's investment income, suggests that any premium rate above the neighborhood of 15 b.p. relative to deposits is too high, while rates below about 9 b.p. are unsustainably low (see Shaffer 1991a, 1991b).[6] Therefore, over the long run, premium rate volatility would tend to be minimized by an assessment schedule that provides a constant proportional aggregate income to the BIF within this range. It is a separate question how to apportion this assessment among high risk and low risk banks. As long as the aggregate premium income falls between 9 and 15 b.p. of aggregate deposits, any risk-based cross-sectional spread can be built into the premium schedule.[7]

[6]Rates between 9 and 15 b.p. would cover average annual outlays but would not permit a reserve fund to grow in step with the insured deposit base. The studies cited found no evidence of permanent trends or shifts in the aggregate loss rate. Earlier studies had debated the actuarially fair premium rate prior to the large losses of the mid-to-late 1980s and, ironically, the legislative mandate for rebates beginning in 1950 was driven by the belief that the FDIC's reserve fund was growing too fast. The same belief implicitly underlies FDICIA's 1.25 percent target level of the fund as it applies in today's economic environment.

[7]One purpose of risk-based premium rates is, of course, to reduce loss rates by reducing moral hazard. However, others have suggested that this benefit would merely offset the increase in moral hazard occasioned by the removal of Regulation Q ceilings on deposit interest rates, leaving the overall loss rates similar to the historical distribution.

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While the spread between 9 and 15 b.p. may seem unduly broad, we should note that this spread is of the same order as the estimated cost of premium rate volatility presented earlier. In particular, using 1995 figures, annual costs of $1.2–4.4 billion correspond to 4.0–14.5 b.p. relative to deposits. This means that, even if a fixed premium rate were inadvertently set higher than the long-run loss rate by as much as 4 to 14 b.p., the banking industry would be no worse off on average than under the current variable-rate policy. One way of establishing a self-correcting mechanism to prevent sustained discrepancies between the assessment rate and the payout rate, while preserving the benefits of a stable premium rate, is to base the premium rate on a long (say, 50-year) moving average payout rate. Then the annual fluctuation in premium rates would be close to zero, while any true regime shifts in the aggregate loss rate could still be accommodated.

Holding a stable premium rate means that the BIF itself would absorb any fluctuations in loss rates over time. In particular, this means that the BIF will rise above 1.25 percent of insured deposits during good times, and will fall below that level during bad times. On rare occasions the fund might turn negative, requiring a government loan until it rebounds. These fluctuations can be accepted as part of the normal, desired functioning of federal deposit insurance. By themselves, such fluctuations are incapable of indicating whether the premium rate is too high or too low. As long as aggregate premium income covers the long-run average loss rate, even a government loan does not constitute a taxpayer subsidy, because it will be repaid—principal and interest—out of future premium income. This idea represents a shift from current thinking, but is essential to removing the unnecessary burden of inefficient deposit insurance pricing.[8]

One additional benefit of allowing the BIF, rather than premium rates, to fluctuate is a likely increase in the FDIC's overall investment income. The fund will be larger at the height of a business cycle, when interest rates (and investment income) are typically high; and correspondingly lower during the trough, when interest rates (and opportunity cost) are typically low. The increase in investment income during the peak will more than offset the reduction of investment income during the trough. This offset happens for two reasons. First, booms are typically longer than troughs. Second, investment income

[8]William Isaac (1995) has similarly noted that "the object in collecting premiums from the banks is not to build a fund but to ensure that over time the deposit insurance program pays for itself," though he stopped short of drawing the conclusion that premium rates should be set at levels that can remain stable over time.

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is a multiplicative (i.e., superlinear) function of interest rates and size of the fund, as illustrated in the following example.

Suppose that annual yields on the investment portfolio are 10 percent during a one-year peak and 6 percent during a one-year trough, following the historical pattern (driven partly by monetary policy actions) that rates are higher in peaks than in troughs. A portfolio equal to $10 billion in both periods will earn $1.6 billion over the two years without compounding. If instead the portfolio is $14 billion in the peak and $6 billion in the trough—the same average size—it earns a total of $1.76 billion without compounding. (Compounding would change the numbers but not the principle.) In this example, the fluctuating fund earns $160 million more (or 10 percent more) than the fund of constant size.

Another Good Way: Countercyclical Rates

Thus far I have argued that premium rates should remain stable from year to year. An alternative case can be made for changing the premium rates in a way that actively reduces the volatility of banks' ROE, thereby reducing the cost of bank capital even more than a fixed premium rate could do. This approach would entail setting rates high during periods of high profitability and low failure rates, and low during periods of low profitability and high failure rates. To follow the opposite pattern, as current policy does, will exacerbate the business cycle and lead inevitably to a stronger contraction of credit during economic downturns, when the economy can least afford it.[9]

A convenient way of implementing countercyclical premium assessments would be in the form of a supplemental corporate income tax on banks. As an illustration, consider the period from 1950 through 1993. The actual net premium rate over this period averaged 6 b.p. of domestic deposits, or just under 4.6 percent of banking industry profits.[10] Aggregate real annual ROE for the banking industry over this period had a standard deviation of 3.041 percent. Had a constant premium rate of 6 b.p. of domestic deposits been assessed instead of the actual rates, the standard deviation of ROE would have been

[9]Arguments along this line were presented by Goodman and Santomero (1986) in the context of risk-based premium rates. However, in that context the variations did have the offsetting benefit of reducing moral hazard on the part of banks' owners and managers, whereas the fluctuations considered here have no such benefit.

[10]Data for this section are taken from the FDIC's *Annual Report* for 1993, the FDIC's *Historical Statistics on Banking, 1934–1992*, and the FDIC's *Statistics on Banking, 1993*. As noted above, the average premium rate of 6 b.p. over this period appears lower than the actuarially fair or long-run sustainable rate, but will serve to form the basis of a meaningful comparison of alternative assessment rules on the volatility of banks' earnings.

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2.968 percent, or 7.3 b.p. lower. If instead the FDIC's funding had been drawn from a flat 4.6 percent income tax, the standard deviation of ROE would have been 2.895 percent, or 14.6 b.p. lower. The reduction of earnings volatility would have been twice as great using an income tax as compared to assessing a fixed proportion of deposits.

The impact of the two alternative funding policies on the deposit insurance fund can also be estimated by compounding the cumulative annual difference in aggregate premium income (alternative vs. actual) at the rate of return actually earned on the insurance fund portfolio in each year. Because the policy of premium rebates was repealed in 1990, as indicated in footnote 2, we apply this calculation to the period 1950–1989 and find that, as of 1989, the insurance fund would have been $360 million greater with a constant 6 b.p. premium rate than with the actual assessments, even though banks' average real ROE would have remained unchanged at 10.2 percent. Alternatively, an income tax would have increased the insurance fund by more than $220 million, again without reducing banks' average ROE.

Conclusion

It is conceptually easy for banks and their regulators to overlook the indirect cost of additional components of risk imposed on the industry by regulatory policies and programs, even though that cost may total billions of dollars annually. Changes in the funding of federal deposit insurance in recent years have increased, rather than reduced or eliminated, premium rate volatility and its attendant costs. As we look for ways to reduce unnecessary burden and inefficiency toward the goal of a safe, sound, and competitive banking industry, here is an easy place to start.

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A Regulatory Placebo? or, The Strange Case of Dr. Kaufman and Mr. SEIR

George Selgin

About half of George Kaufman's recent (1996) article on bank regulation constitutes a welcome, sober diagnosis of the problem of bank failures, showing how many beliefs concerning the likely side-effects of such failures are based more on myth than on hard evidence. Kaufman observes: (1) that individual bank failures are generally no more harmful to the economy than failures of other business firms; (2) that bank-run "contagions" leading to systemic failure have been extremely rare; and (3) that serious problems in the banking industry have mainly been due, not to anything inherent in fractional reserve banking, but to faulty government regulations, including the very regulations that are supposed to guard against systemic banking system failures. Kaufman provides ample support for all these claims, using evidence drawn mainly from modern U.S. experience.

Hearing these arguments, a reader might expect Kaufman to conclude that banking systems would function best if governments dispensed with regulation, including prudential regulations, altogether. Yet Kaufman does not draw any such conclusion. Instead, he continues his article by spelling out events and circumstances that might cause a systemic banking crisis, neglecting his own arguments and evidence showing the improbability of such a crisis. Kaufman goes on to defend a limited set of prudential regulations—the SEIR (Structured Early Intervention and Resolution) program—designed to "further mitigate the likelihood of systemic risk in banking" (p. 29).

How is it possible for Kaufman to argue so convincingly the lack of any evidence of genuine market failures in the banking industry, and the counterproductive nature of past government intervention in

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banking, and yet still conclude that some government regulation of banks is a good idea? A careful reading of Kaufman's article reveals the answer: Kaufman defends prudential bank regulation, not because he thinks that banking systems are inherently prone to systemic risk (where individual bank failures turn into systemwide runs), but because banking is widely perceived by others to be vulnerable to systemic risk. In short, banks need to be regulated because many people *believe* they need to be regulated. Regulation serves as a soothing, hence beneficial, placebo.

Thus Dr. Kaufman, the exploder of bank market-failure myths, undergoes metamorphosis to become Mr. SEIR, the pragmatic advocate of a modified package of prudential regulations. But can Mr. SEIR coexist with his alter ego? I think not. To do so, he would have to show that the "widespread perception" of systemic risk he repeatedly refers to is in fact self-validating—that is, that the beliefs in question are ones that will in fact make a banking system vulnerable to systemic failure in the absence of some government response.

Now, it is true that a perception of systemic risk that is widespread among bank depositors can be self-validating: if enough depositors become convinced that, say, the failure of any single bank is likely to trigger runs and failures among all banks, then systemic runs and failures can become a reality. However, it is precisely this bank-run "contagion" thesis that Kaufman so effectively demolishes, showing instead that bank runs "tend to be informational and bank specific" (p. 21). Experience, in other words, offers no grounds whatsoever for assuming a "widespread perception" among bank depositors that systemic risk is a serious problem. Bank depositors generally do not behave as if tormented by visions of a collapsing payments system. They therefore have no need for a placebo to relieve them of their hypochondriasis.

If the public generally is not losing sleep over the possibility of systemic risk, who is? The regulators themselves, that's who. I cannot help thinking that Kaufman, in arguing that some bank regulation is essential given widespread fears of systemic risk, has the fears of bank depositors confused with those of bank regulators. There is, of course, no doubt that bank regulators themselves (with rare and always off-the-record exceptions) think that systemic risk is a problem inherent in banking, so that some government regulation is necessary. (Members of any social group tend to embrace beliefs that place that group in a favorable light.) But regulators' publicly held beliefs are, unlike the beliefs of bank depositors, not obviously self-validating: a banking system is not actually vulnerable to systemic risk just because govern-

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ment regulators believe it to be so, except to the extent that the regulators' own interventions have made it vulnerable.

The systemic risk "problem" to which Kaufman repeatedly refers is, in short, a "problem" that exists mainly in the minds of bank regulators who, as Kaufman notes (p. 40), "have been among [the problem's] most vociferous expositors and prophets." As such, the "problem" is educational, not financial; the solution therefore is to reveal the inconsistency of regulators' claims with the facts of experience, not to pretend that the claims are valid. Regulatory schemes, no matter how modest, should not be propounded just as a sop to bureaucrats, to avoid hurting their feelings or to enlist their support.

Unfortunately Mr. SEIR neglects the distinction, so carefully drawn by Dr. Kaufman, between regulatory propaganda and actual financial system problems. Kaufman is thus driven, by his pragmatic alter ego, to spend several pages (pp. 25–28) examining "The Causes of Systemic Risk" (as if systemic risk were a genuine threat, rather than a remote possibility made into a bogeyman by regulators), and several more offering "Public Policy Remedies" (remedies to a largely hypothetical problem, that is).

Consider for example how Kaufman concludes his review of the causes of systemic risk, by observing (pp. 27–28) that "If neither the running depositors nor the sellers of government securities perceive any bank in the country to be sufficiently sound to warrant a redeposit, then there will be a flight to currency. . . . In this scenario, banking becomes a special public policy concern." Well, it is also possible to come up with a scenario that would make midwestern earthquakes a special public policy concern. The question is whether the scenario is likely to play out in reality. Evidence gathered by Kaufman himself (Kaufman 1994) shows that a flight to currency is more likely than a major midwestern earthquake, but not much: currency runs have been rare in the past (the one major exception—the run on the U.S. dollar in the 1930s—was prompted by fears that the dollar would be devalued rather than by bank failures). Today, the fact that the dollar is freely floating, combined with the growing importance of nationally and even internationally diversified banks, makes a "flight to currency" less likely than ever.

Surely bank regulatory policies ought not to be promulgated in response to the mere possibility of a systemic crisis, if that possibility is remote. (We do not insist that skyscrapers in Kansas City be earthquake-proof, even though an earthquake might strike Kansas City.) To assume that government intervention is justified in banking so long as something might otherwise go wrong is to forget that government intervention itself often goes wrong, as Kaufman has so effectively

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documented elsewhere (e.g., Benston and Kaufman 1995; see also Benston 1991 and Selgin 1989).

Given Kaufman's understanding that past regulations have generally been "counterproductive" (that is, have increased rather than reduced the likelihood of systemic failure), one would expect him to advocate a regulatory version of medicine's first Hippocratic commandment, "Do no harm." He might, for example, have started with the Federal Reserve itself, which over the last several decades has helped bankrupt large numbers of the nation's financial firms by subjecting them to dramatic changes in nominal interest and exchange rates. To be sure, Kaufman is well aware of the fact that central-bank inspired macroeconomic instability has been a major contributing factor in bank failures. Still Kaufman—in his Mr. SEIR persona—dismisses the suggestion that the Fed first put its own house in order, saying (p. 28) that "history has amply demonstrated that our current knowledge of macroeconomics is far short of what is required" to consistently avoid severe macroeconomic shocks. Granting that central banks do not have the knowledge needed to "fine tune" their economies, does it follow that they lack as well the knowledge to avoid the sort of drastic changes in nominal magnitudes that sounded the death-knell for so many U.S. financial firms? I do not believe it. What the Fed lacked until the 1980s was not knowledge, but political fortitude. And, if the Fed were in fact too ill-informed to know how to keep long-term nominal interest rates reasonably stable, how could we possibly expect it to be smart enough to implement and manage a reliable system of prudential regulations?

Kaufman skips over that dilemma in order to outline his own favored program for prudential regulation, which is based on the premise that "small" bank depositors should not suffer losses from bank failures, that is, the premise that "small" bank customers should not bear any adverse consequences from choosing to put their money into poorly managed banks. The first part of this program consists of "explicit full government deposit insurance" for such small depositors. Here again, Mr. SEIR prevails over Dr. Kaufman, passing up an opportunity to plead for the complete dismantlement of a regulatory arrangement which, in light of Kaufman's research, appears both theoretically unnecessary and historically disasterous. Regulators are therefore encouraged to continue offering something akin to the present insurance arrangement, with insurance limited to "small" depositors, on the grounds (1) that such depositors "are the most likely to run into currency and threaten systemic problems" and (2) that deposit insurance "is a political reality in almost all countries." The first ground neglects the crucial distinction between "most likely" and "likely";

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the second neglects the distinction between "political reality" and economic good sense. (Twenty years ago high inflation, interest-rate regulations, and substantial barriers to branch banking were "political reality." Luckily, many economists—including Kaufman—did not make that fact a reason for adopting a complacent attitude toward any of them.)

It may be worthwhile to recall for a moment just how it is that deposit insurance became "political reality" in the United States. Before the Great Depression, the federal government did not insure bank deposits: several states had tried it, but always with unfortunate results. Federal deposit insurance was adopted in the course of the Great Depression, despite the poor record of state schemes, as a half-baked but politically "realistic" substitute for structural reform of the banking system, that is, for intrastate and nationwide branch banking. Insurance was rationalized on the false grounds that banks were failing because they were being run upon. The truth was, largely, the opposite: banks were run upon because they were failing, and they were failing in part because they were geographically underdiversified. Many experts at the time understood this, pleading for the elimination of restrictions on branching, while pointing out flaws inherent in government deposit insurance. Ironically, now that restrictions on branch banking have largely ceased being part of "political reality," deposit insurance itself has taken their place as a principal cause of structural weakness in the U.S. financial industry.

Kaufman does propose that deposit insurance premiums should be risk-based—a change that would eliminate many unfortunate consequences of insurance, including its tendency to transfer resources from less-risky to more-risky banks. But there are good reasons for doubting that such premiums either can or would be assessed by a monopoly provider of insurance. In practice government deposit insurance is toxic even in "small" doses.

Besides deposit insurance, SEIR involves a system of minimum capital requirements on banks. But there would be no need for such regulation of capital in the absence of deposit insurance which, as Kaufman and others have noted, acts as a substitute for private capital. SEIR also calls for sanctions that would punish banks as their performance deteriorates. Again, in the absence of explicit deposit guarantees, it seems to me that the market would dole out all the punishment needed to discipline bad banks, in some cases by confronting them with (non-contagious) runs.

Finally, SEIR requires an explicit "closure rule" to shut down banks before their net worth falls below zero. I see no harm in such a rule, but once again doubt it would be needed in the absence of other

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regulatory procedures that presently keep insolvent financial firms on life-support. (Dr. Kaufman interjects here, by the way, that timely resolution itself makes deposit insurance "effectively redundant," supplying the reader yet another reason to wonder why Mr. SEIR insists on endorsing the continuation of such insurance.)

The last part of Kaufman's article looks at payments system risk. Kaufman outlines a payments system crisis—an "unwinding" scenario, where a major end-of-the-day default in the payments clearing process forces the reversal of a series of intraday transfers. He then goes on to consider various solutions, including (1) nationalization of all interbank clearings through Fedwire, where the Fed guarantees payment finality; and (2) simultaneous or real-time gross settlement.

Here again, I question both the likelihood of the imagined crisis actually occurring under private arrangements, and the efficacy of government interventions recommended to solve the purported problem. Why, in a private clearing arrangement, where payments are not guaranteed "final" until the end of the day (and where, as Kaufman says, promises of finality would not be credible anyway), should banks behave recklessly by treating intraday credits as equivalent to collected funds? Why would banks in such a private arrangement not hold precautionary reserves sufficient to cushion themselves against settlement defaults that may occur, reducing their exposure, and any consequent risk of "unwinding," to some reasonably small level? (What are reserves for, anyway?) What, precisely, is the nature of the market failure that supposedly justifies nationalization or regulation of the clearing system? And, finally, where is the empirical evidence of private clearing system failures? (The standard reply offers the Bank of New York computer glitch in 1985—an episode only a regulator could interpret as justifying drastic government intervention in the clearing system.) Frequently repeated statistics showing the large value of interbank transactions by themselves prove very little. What matters is not the value of such transactions alone, but their value relative to the value of reserves banks keep on hand as protection against default risk.

If the case against having a fully private interbank payment system is weak, the claim that either Fed guarantees of payment finality or a switch to real time gross settlement is better is even weaker. Instead of "solving" the problem of payments system risk by providing guarantees of finality, central banks that offer such guarantees (especially in combination with subsidized intraday overdrafts) merely reduce commercial banks' incentives to maintain adequate reserves or to limit interday lending and borrowing. The costs of (inevitably increased) defaults are then borne not by "the sponsors of the clearing facility,"

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as Kaufman claims, but by the general public, through inflation. In other words, the government cure for the hypothetical disease of private clearing system unwinding has a moral-hazard side effect that may well be worse than the purported disease itself.

Because Kaufman understands the moral-hazard problems present in a system, such as Fedwire, that combines net settlement with central bank guarantees of payment finality, he proposes "simultaneous payments and receipts" or "real time gross settlement" as a substitute for net (end-of-the-day) settlement. Although it is typically presented as a very modern, high-tech approach to settlements, a real-time gross settlement system would in at least one sense be a step back to the middle ages, in so far as it would eliminate reserve-holding economies associated with net settlement. (Central banks have reason to welcome the idea, because it increases the demand for base money and, along with it, their seigniorage earnings.) To state the point another way, although gross settlement eliminates any risk of systemic failure related to the "unwinding" problem, it also subjects individual banks to large intraday reserve losses, thereby increasing their exposure to settlement default unless they compensate by starting each day with a much higher balance of prudential reserves. We thus have another example of a "solution" to a potential flaw in market arrangements that is itself not merely potentially but actually flawed.

In criticizing Kaufman's policy recommendations, I do not at all mean to suggest that they would be anything short of a vast improvement over existing regulatory arrangements. Nevertheless, Kaufman's seemingly harmless placebo—no less than the present, more toxic, regulatory arrangements—perpetuates the myth that banking systems are inherently crisis-prone, and that only a regulatory cure can help. This is a bad thing, because it diverts attention from the fact that every sickness ever suffered by the U.S. financial system has been the consequence of some toxin administered to it by the government, usually in the guise of medicine. Take U.S. banks off this quack regimen. Give them a stable macroeconomic environment (meaning, simply, low inflation), the ability to branch freely, and freedom from portfolio regulations; subject them to open competition with foreign-based firms, and assign them full responsibility for meeting their own obligations to their customers. Then you will have a healthy U.S. banking industry. That, at least, is the cure implied by Kaufman's painstaking empirical research. I only wish the good doctor would prescribe it.

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The Informal Economy in Latin America

Enrique Ghersi

Peruvian writer José María Arguedas once wrote that we Latin Americans are people rooted in ancient cultures: we have unique histories and indelible characteristics. I would say that, among those characteristics, one of the most remarkable is that by which our nations convulse themselves in revolution from time to time.

Contemporary Peru has experienced two such revolutions: one that failed, which is the one attempted by the Shining Path, the Maoist terrorist group that began its insurrection in 1980; and another one that succeeded, which is the revolution of the informal entrepreneurs who work outside the law in every city in the country.

Thus, if we had to conceptually summarize the history of Peru in the last 15 years, I would say that it is the history of those two revolutions: the history of the communist revolution carried out by the Shining Path and the history of the informal revolution carried out by the popular entrepreneurs. The history of a revolution that failed militarily and politically, and the history of a revolution that has surely become one of the most impressive successes of our time.

The Other Path, originally published in Spanish more than 10 years ago, addressed that phenomenon. Written between 1982 and 1986 under the leadership of Hernando de Soto and published in November of 1986, the book represents the most organic effort to analyze Latin American reality from a classical liberal perspective. Its main premise is that, contrary to conventional wisdom, popular capitalism exists in Latin America, and is created by the activities generally categorized as informal. Those informal activities, illegal but not criminal, take place in the absence of legal protection and guarantees because Peru's institutional framework has aimed at maintaining and extending the

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social privileges of the few at the expense of the many. The resulting system is a mercantilist one, which could be characterized as an antidemocratic form of capitalism.

Until the mid-1980s, classical liberalism in Latin America was confined to being a distorted theory applied by the right-wing military dictatorships of the Southern Cone, especially those of Chile, Uruguay, and Argentina. With varying degrees of success, those regimes attempted to apply economic policies inspired by some classical liberal ideas and were, for better or worse, the only arguments that both advocates and detractors of classical liberalism could use to prove its feasibility in Latin America—or to show its inappropriateness. The debate faced a curious paradox: its advocates, genuine partisans of freedom, could unfortunately exhibit only some military dictatorships as presumed liberal governments; its detractors, often advocates of an obstinate collectivism, were able to equate dictatorship with classical liberalism, and fight those two enemies at the same time.

That situation greatly limited classical liberalism's appeal in Latin America, despite its undeniable intellectual vigor.[1] At best, it could aspire to occupy a place among the advanced elites capable of ridding themselves of the deadweight of collectivism. But hardly could it become a widespread message, let alone a mass phenomenon.

However, since the discovery of informality, classical liberalism has begun to break those ties in Latin America, and it has become evident that it offers a different perspective. That new perspective created a great controversy in Peru and the rest of Latin America, and it spread to the United States, Europe, Asia, and Africa with great success. *The Other Path* was without a doubt a seminal book. Indeed, Ronald Reagan said that without it he would not have been able to understand the situation in Latin America.

Up until that moment, socialism had been the predominant ideology in our countries. There existed a kind of prejudice that claimed capitalism was alien to our national identity. The entrepreneur was the enemy and accumulating wealth was a sin. But showing that the poor in our countries freely and spontaneously were generating on the streets and squares of our bustling cities a free-market economy of popular origin, outside and even against the law, *The Other Path* allowed us to see that capitalism was embedded in the Latin American spirit.

In sum, the book showed that the capitalist spirit was as Latin American as it was universal because liberty is inherent to humanity,

[1]Many years have elapsed since the time of the old 19th-century liberals, like Juan Bautista Alberdi, and their creative efforts to try to place liberalism in a Latin American context.

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not just to one ethnic or cultural group. That fundamental contribution allowed classical liberalism to take the offensive in the world of ideas. Since 1930 that world had been dominated by a sort of indigenous collectivism equally imposed by the left and the right. With no reference to reality, that collectivism was a collection of prejudices that, nonetheless, inspired the ruling politicians from all governments.

A vigorous response has occurred since 1986. Private property, free enterprise, and competition, as inherent rights of the poorest among the poor, have been revindicated. The individualist ethic is shown to have existed in the Latin American past: the law does not limit power, it only reflects it; and the state is a means of oppression of all citizens. I am convinced that the counteroffensive begun by *The Other Path* in the world of ideas quickly moved to the world of politics. Perhaps that was most clearly seen in Peru itself, where Mario Vargas Llosa was at the forefront of this renaissance in 1990.

Someday the intellectual history of this shift should be written. But more than a decade after the restoration of democracy in Latin America, one has to acknowledge that social democracy is increasingly losing ground to classical liberal ideas, especially as a consequence of the public's conviction that liberty and individual responsibility are not characteristics alien to their personalities.

The Informal Economy

We have often read about the underground activities of the informal economy. Conceptually we can offer a simple definition of this phenomenon: underground activities are those that have legal ends but employ illicit means. That is to say, they are activities that do not intrinsically have a criminal content, but must be carried out illicitly, even though they are licit and desirable activities for the country.

Thus, from an economic point of view, the most important characteristic of informal activities is that those directly involved in them as well as society in general benefit more if the law is violated than if it is followed.

To clarify, let me use the example of the itinerant street vendors that help populate the cities of Latin America. The existence of thousands of street vendors is a major feature of cities like Mexico City, Sao Paulo, and Lima, which are among the most populated cities in the world.

The street vendor is, first of all, a merchant. His goals are licit, but he must use illicit means—noncompliance with legal regulations, noncompliance with labor laws, nonpayment of taxes—because he has no other alternative. He cannot incorporate himself in the formal

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economy because the latter imposes so heavy a cost on Latin American societies as to make it impossible for people and entrepreneurs with minimal income to enter it. Informality, then, is a situation whereby people want to work legally, but cannot. The only alternative left is to work in that area of relative illegality created by the legal cracks in Latin American society.

Although it varies from country to country, the importance of informality is very wide. In the case of Peru, it has been calculated that, in general terms, the equivalent of 38 percent of gross domestic product and 60 percent of man-hours worked take place in the informal sector (De Soto et al. 1986: 13).

That allows us to draw some initial conclusions. First, informality is socially and economically significant because, if 60 percent of man-hours are in the informal sector, the government only controls 4 out of 10 hours worked. Plainly stated, the majority of Peruvians work outside the law.

The second conclusion is that, despite their quantitative significance, informal activities have very low productivity, since, as we have seen, 60 percent of the labor produces only 38 percent of the product. That takes us to some problems that we will have to confront later, especially the lack of a transparent legal system. The "informals," for instance, cannot go to a court of justice to enforce their contracts; they cannot insure themselves against risk; and they cannot acquire secure property rights. As a result, their long-run productivity suffers.

Informal Construction

In the case of Latin America it is significant, at least as illustrated by the Peruvian experience, that the informal sector has a key presence in the construction and housing sector. In fact, urban development in Peru has taken place mostly at the hands of the informal sector. The majority of Lima, a city of 8 million people, approximately half of its geographical area, has been developed completely outside the law, in what Peruvians euphemistically refer to as "young towns," or *pueblos jovenes*, which are nothing more than slums, or marginal urban neighborhoods developed after the invasions of public and private lots by migrants from the countryside during the last 40 years (ibid.: 17).

The development of the informal housing sector has great economic, social, and political importance in the case of Peru. First of all, it is economically significant because the investment people have made in their own informally built homes amounts to $8 or $8.5 billion, an

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investment that has been made with no government aid of any kind (ibid.: 18).

Second, it is socially important because it represents the emergence of a new proprietary class. Traditionally, in Peru—as in the rest of Latin America—the less privileged classes of society had not been property owners. The access to property had been limited to the wealthy or aristocratic classes. Through this process of informal construction, however, the least privileged sectors of Latin America have been able to revindicate for themselves the right to private property and make it a reality in their cities.

Finally, informal construction has had a remarkable political significance because, in the final analysis, only the property owners can fight for their rights. Only when one has a right to own something does one have a sense of responsibility, struggle, and political challenge. Countries without private property are countries where civil society is weak and the citizenry does not confront political power because, in the final analysis, there is very little room left for individual development.

Informal Commerce

Another sector of great importance in the informal economy is the commercial sector. In the past the presence of informal activities in the commercial sector in Peru has been notable, perhaps the most notable of all. Those activities are basically carried out by street vendors—the so-called itinerant merchants that exist in all Latin American cities. They are people of humble origin, probably migrants from the countryside, who, given the financial situation they face, have to become entrepreneurs so that they can earn a living.

Although updated figures are not available, it has been calculated that in 1991 there were approximately 300,000 itinerant vendors in Lima. Many people believe that, as a result of the restructuring programs undertaken by the Fujimori administration, that number has increased significantly. Indeed, half a million public employees were laid off by the Peruvian government and many of them have probably found a refuge in informal commerce.

The social importance of the peddlers stems from their revindication of private enterprise for the least-favored sectors of Latin American society. We have read books and listened to programs that have tried to convince us that capitalism is foreign to Latin America; that those who are entrepreneurs here are part of a foreign front of penetration or a remnant of the colonial aristocracy, but are not true Peruvians, Mexicans, or, even, capitalists because they do not represent true

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capitalism. One does not have to write textbooks or quote Adam Smith to see that that is false. It is enough to go out on the streets of any Latin American city and show those who do not want to accept the evidence that the poor in Latin America practice capitalism on the streets, even though nobody has taught it to them; that they do not have to be rich to become entrepreneurs, it is enough to be hardworking; that they do not have to be smart to earn money, they only need to be organized; that they do not have to be geniuses to discover an opportunity, they only need to be audacious.

With decision, honesty, and audacity, the streets of Latin America have become the best business schools available. Thus, those streets vibrating with entrepreneurial activities have become in a way the best argument in defense of free enterprise and Latin American capitalism. In addition, the existence of informal commerce offers the best testimony for those people who have the ideological compulsion to deny the evident: work and responsibility are virtues inherent to the human being.

Informal Industry

The presence of informality is also significant in industry and services. In the case of industry, informal activity is clearly underground.

Sometimes I speak of the underground economy as a synonym of the informal economy. I would rather use the term "informal," which is more technical, because the underground economy gives an impression of concealment that is not accurate in all cases. In fact, informal urbanization, commerce, and public transportation services are absolutely public and visible. There is nothing subterranean about those activities. The terms submerged, hidden, or "own-account" economy are even more misleading and imprecise. Nevertheless, in the case of industry, there are indeed underground activities.

There are two kinds of informal industrialists in Latin America. One is the formal industrialist who informalizes part of his production as a result of the high cost of regulation or taxes. Even though he may conceal part of his production, he belongs to the community of established industrialists. In many cases the high cost of legality in Latin America has forced him to move part of his production to the informal sector. Thus, he has to abandon the formal sector to hide totally or partially in the informal sector. That happens every time inflation rises, which is an indirect way of raising taxes.

The other kind of informal industrialists is made up of artisans and fully informal industrialists, who are employed illegally in the manufacturing sector. There are areas of Peru where that activity is

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very pronounced. They include textiles and ready-to-wear clothing, furniture making, and automotive repairs. For instance, in the craft industry, we find people who, in the security and intimacy of their own homes, set up workshops with relatives and friends who, in many instances, do not get paid or get paid indirectly by being taught the trade. In this way, a significant amount of microenterprise activity is generated.

Informal Services

As in the previous cases, the level of informal activity in the service sector is quite high. The most remarkable case is public transportation. In developed countries, public transportation is generally state-run; in developing countries, public transportation is generally private and informal. In Latin America, the emergence of big cities has gone hand in hand with the development of huge systems of informal transportation.

In 1990, 95 percent of urban transportation was in the hands of the small entrepreneurs, each one the owner of his bus or *kombi*. (The term "*kombi* capitalism" has come to describe that kind of entrepreneur.) That same year, the entire state-owned public transportation system went bankrupt. The Peruvian government dissolved the only public enterprise that existed in the public transportation sector by selling to each driver the vehicle he was driving and thus completely informalizing urban transportation. Also in 1990, Ricardo Belmont, then mayor of Lima, liberalized urban transportation when he deregulated routes, rates, and market entry and exit. That forced drivers to use their imagination because, as entrepreneurs, they had to identify the desires of their customers and offer differentiated services.

The liberalization of rates also has resulted in a variety of services and a range of prices. If people want to travel squashed like sardines in a can, they can pay a low price. If, on the other hand, they wish to sit comfortably in an air-conditioned car with a TV—many drivers have installed TVs and VCRs and play videos during the ride—they pay a different price. Even door-to-door nonstop service is offered. That has all been generated informally in the taxicab as well as in the bus sector. It is the absolute reign of informal activity.

Many people believe that the reason President Fujimori has faced little opposition for so many years, even though he implemented the deepest and most dramatic structural adjustment measures in Latin America, is because most of those who were laid off in the public sector found something more advantageous to do in the private sector.

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Those who left government jobs as a result of Fujimori's economic adjustments—in all, between 500 and 600 thousand people—immediately began to work in the private sector at much higher wages. For example, during the five years of the government of Alan García, in which inflation was 1 million percent, public employees were paid fixed wages of no more than $50 per month. On the other hand, they could make up to $4,000 per month in the private sector as private carriers, without having to invest one penny since the vehicle dealers financed the acquisition of the vehicles.

The Origin of Informality

The origin of informality cannot be found in a cultural shortcoming,[2] nor in a religious or ethnic problem. It can be found in the inefficiency of the law. Technically speaking, activities are informal because of the cost of legality. Politicians, policymakers, and, especially, lawyers do not understand that the law has a cost like everything else—namely, the amount of time and information necessary to comply with it.

In Peru, as elsewhere in Latin America, the cost of the law is very high; in fact, comparatively higher than in the United States. The difference between developed and developing countries, as Douglass North (1990) has so brilliantly documented, can be found in efficient institutional organization. In other words, the difference can be found in transactions costs or the cost of the law. In a prosperous country, transactions costs are low relative to national income, while the opposite is true in a poor country.

In 1986, we conducted a famous experiment in Peru that enabled us to measure the cost of entry into the market. We created a team that would simulate the establishment of a small clothing workshop, and we set out to strictly comply with all the legal requirements that the legislation imposed, including not paying one penny in bribes to anyone, even if it took longer than necessary. The paperwork delayed us for almost a year and, during that process, we were asked to pay bribes 12 times, of which we had to give in twice, because, had we done otherwise, we would not have been able to continue the experiment.

[2]Sociology books suggest that we Latin Americans—especially Peruvians—have the defect of being stupid, which explains our inability to progress. Indigenous heritage and Spanish colonialism retarded us to such a degree that, along with corruption, the climate, and spicy food, we have turned into depraved peoples—into something like cultural imbeciles. That reasoning is implicit in conservative eurocentric texts and in delusional Marxist texts. At bottom, that view stems from the rejection of the imagination, strength, and authenticity of Latin Americans.

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Later, to get a comparative idea about how long it took us, an American professor conducted the same experiment in Tampa, Florida. What took us a year to accomplish took him two hours in the morning, and he did it through the mail. That was exactly the difference between the cost of the law in Peru and in the United States.

Latin Americans are not demented beings who go around measuring the cost of the law. We only measure the cost of the law when the cost of complying with it is greater than its benefits. People comply with the law when it is convenient. When it is not, they do not comply with it. It is only rational that it be like that.

In Latin America and in Peru, in particular, where we have tangible evidence, the law is costly. It is so costly that it distorts the market and excludes from it the least-favored sectors of the population. Why are there informals, then? Because people, given their small incomes, cannot work otherwise, cannot comply with the law, cannot pay taxes, cannot have access to formally built housing because they cannot afford it. That is the objective reality. It is not a cultural shortcoming; it is not a mental problem; it is not an ethnic heritage; it is legal discrimination.

The origin of that legal discrimination lies in mercantilism. What remains in Latin American countries is a kind of capitalism where private property is not a right but a privilege, private enterprise is also a privilege, and competition does not exist. The state takes it upon itself to create legal obstacles to market competition. With that tendency, which forces us to maintain a kind of institutional Jurassic Park in Latin America, we have been able to preserve the dinosaur of mercantilism from which we suffer: large and incompetent government, on the one hand, and hypocrisy, on the other. The generalization of hypocrisy, which allows us to keep a system of privileges in Latin America, is without a doubt the main cause of our underdevelopment.

Conclusion

That is why I said that modern-day Peru has experienced two revolutions: the revolution of the Shining Path, which was a failure because it did not coincide with the desires of the population; and the revolution of the "informals," who have revindicated for themselves the right to private property, the right to free enterprise, and, above all, *the right to develop their individual capacity and effort*.

In so doing, the least-favored Peruvians and Latin Americans are at the forefront of the construction of an authentic Latin-American market economy and have created the foundation for optimism about future changes. Until recently, there was reason to be very pessimistic

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about any major government reforms because they lacked social support. Nowadays, with the emergence of uncontainable informal activities and the development of an entrepreneurial sector of popular origin, large adjustment programs have social support. There are people who demand from the state the right to private property, the right to competition, a sound currency, and less government. In sum, people now demand more space to develop their creativity and exercise their audacity. Those people offer us, maybe in the case of Peru, a political environment where radical and deep reforms can be undertaken.

Many people wonder with admiration why Fujimori has been able to achieve such spectacular success in the economic sphere in half the time, for example, that it took Chile. Peru has taken 5 years to achieve what Chile achieved in 10 or 15 years. Why? I believe that has been so, among other reasons, because there is a base of social legitimacy. People no longer want to hear the myth of the public enterprise; they no longer want to listen to the tale of "social justice." Young people even mock it. Those youngsters of humble origin, with names like Washington Quispe, represent a completely new class that does not believe in the public sector. It is a class that deep inside does not believe in anything, which is a kind of attitude that allows the development of individual responsibility and the confidence that only through one's own efforts can progress and responsibility be created. That confidence in a Latin American individual's own efforts, that conviction that there is nothing in our past that will crush us, enables us to argue that the emergence of the informal economy is perhaps the most socially and economically remarkable event in Latin American history since the arrival of Columbus.

The experience of the informal economy offers us the conviction that Latin America can finally find a solid base for sustained growth and that soon we Latin Americans will all greatly enjoy the benefits of freedom.

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BOOK REVIEWS

Reputation: Studies in the Voluntary Elicitation of Good Conduct
Daniel B. Klein, ed.
Ann Arbor: University of Michigan Press, 1997, 318 pp.

What do Underwriters' Laboratories, gossip, consumer credit bureaus, brand names, and 11th century Maghribi traders have in common? As Daniel Klein explains in his introduction to the readings he has assembled on those seemingly disparate topics, all foster actions that benefit society. Manufacturers strive to produce products that will win a certificate of safety from Underwriters' Laboratories; residents of farming communities cooperate at harvest time to escape being labeled a shirker by the town gossip; consumers pay their bills to avoid a blot on reports circulated by credit bureaus; and McDonald's, Ford, and others who spend millions promoting their brand name provide quality products to ensure their advertising dollars are not wasted. In each case, concern about reputation—the benefits of a good one and the costs of a bad one—provide an incentive for what the book's subtitle terms "good conduct."

In addition to Klein's own work on credit bureaus, the book contains several articles that are already classics in the burgeoning interdisciplinary field of human cooperation: Bruce Benson's study of the spontaneous evolution of commercial law among medieval European merchants; Sally Engle Merry's analysis of the role of gossip in lubricating social relationships; and Benjamin Klein and Keith Leffler's explanation of why price sometimes signals quality, to name but a few. The book will be welcomed by economists, sociologists, historians, and others seeking to understand what makes people work together to pursue mutually beneficial interests. Besides its value to specialists, it could serve as a supplement for an advanced undergraduate or beginning graduate course on the economics of cooperation.

About the only ones likely to shun this volume are lawyers, for the readings collected here strike at one of the legal profession's principal conceits: that without a legal system backed by the sovereign power of the state, economic activity would be impossible. The articles reprinted here by Benson on the European law merchant, Avner Greif on traders

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in the Maghrib, and Paul Milgrom, Douglass North, and Barry Weingast on decentralized systems of contract enforcement flatly contradict such a claim and together with the other readings show that entrepreneurs can often do quite nicely without the state and its legal apparatus.

The belief that voluntary exchange between consenting adults could not exist without law handed down by a sovereign originates with Thomas Hobbes. He conceived of all trade as involving sequential exchange: one party delivered goods or services and then waited for the other to perform. But as he explained in a memorable passage in *Leviathan*, the party performing first "has no assurance the other will perform after because the bonds of words are too weak to bridle men's ambitions, avarice, anger, and other passions without the fear of some coercive power." Absent the threat of a lawsuit, Hobbes thus saw no reason why the party performing second would ever honor his or her obligation. They had what they wanted and keeping their end of the agreement only made them worse off. In a society with no courts, everyone would recognize the folly of initiating an exchange, and trade would simply not exist.

As always with Hobbes, the logic is impeccable, so impeccable that stated formally, as a one-time prisoner's dilemma game, it remains the point of departure for studying the conditions that give rise to cooperative behavior. Yet five centuries before Hobbes' theory appeared, long-distance trade in North Africa and the Mediterranean was flourishing thanks to an intricate network of contracts which no court had the power to enforce. Why were those traders willing to keep their end of the bargain if they were beyond the reach of any legal system? Where did Hobbes go wrong? Where does the logic behind the prisoner's dilemma break down?

In one of the articles Klein includes here, Greif allows traders who operated in modern-day Morocco, Algeria, Sicily, Israel, and Syria to answer those questions. Citing their letters and other original documents, he shows that they spotted the incentive their overseas agents had to break their promises and devised a way to keep them honest. The Maghribi traders' solution was to offer their agents far greater profits from continued dealings than the agents could earn by cheating once. Those with a reputation for performance were rewarded with repeat business while those with a bad reputation were denied future opportunities. In the jargon of game theory, the Maghribi merchants came up with a way of converting a one-time game into a repeated one.

Does that mean the state is always irrelevant? Not necessarily. As Milgrom, North, and Weingast show in another article in the collection, any system of contract enforcement has its costs. That is as true of the voluntary one devised by the Maghribi traders and the Law Merchant system that emerged in medieval Europe as it is of today's coercive, state-sanctioned method of ensuring performance through the threat of a lawsuit. What differentiates voluntary from coercive systems is how costs change as trade develops.

With a voluntary mechanism, a participant must query a central bureau to determine whether the other party to a potential trade has a history

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of cheating or not. If the answer is affirmative, the honest trader refuses to deal with the cheater. The fear of a boycott is what ensures that people perform their current obligations. But traders incur costs in ascertaining the past history of those with whom they contemplate exchanging, costs that increase as the economy grows. The number of potential trading partners on which information must be gathered expands, and the number of queries rises as the number of potential exchanges increases. By contrast, there are economies of scale in operating a contract-enforcement scheme backed by the sovereign power of the state, and as trade increases, those economies become more pronounced. Eventually, according to Milgrom, North, and Weingast, the sum of the costs traders must bear in querying before each trade will exceed the costs of operating a formal judicial system. Indeed, rising transaction costs are how they explain the replacement of the voluntary enforcement mechanisms in use in Europe during the late Middle Ages by national courts.

Does that mean that all voluntary systems of contract enforcement will inevitably be replaced by coercive ones? Are lawyers really needed after all? Again, the answer is not necessarily.

Milgrom, North, and Weingast's main contribution is to put the focus squarely on transaction costs and how changes in those costs dictate the choice between a voluntary and coercive enforcement mechanism. However, it is misleading to think that their work implies that increasing trade always makes voluntary mechanisms more costly than coercive ones. Greater trade lowers at least some of the costs involved in operating a voluntary system. The best example is how the spread of faxes, computers, and other technologies reduces the costs of compiling and disseminating information about the past behavior of consumers and businesses. Hence, while more trade may raise some of the costs associated with a voluntary, reputation-based system, it lowers others. Specifying the different costs, and how they net out as trade expands, should be one of the questions pursued by those picking up where the articles in this volume leave off.

Most of the writings in this book are about institutions that are found in the United States today or were a part of the history of other advanced market economies. Yet their greatest value may be in what they have to say to leaders in developing and former communist countries trying to build market economies. While those involved in the construction have at last realized that the foundation must include a set of institutions that can support market exchanges, there has been a tendency to borrow the most visible institutions that undergird exchange in today's developed economies—courts, commercial legal codes, and the like. But as the several articles Daniel Klein has collected here show, expanded trade need not be a hostage to the development of courts and the lawyers and other trappings that go with them.

There are, to be sure, times when the legal system provides an important lubricant for trade, as Hernando de Soto's writings on the role of government in formalizing property rights show. But not in every case.

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When left alone, entrepreneurs can often find their own way around the Hobbesian problem of contract performance. Indeed, perhaps developing countries and their advisers might be well advised to give some thought to how they can smooth the way of those wishing to establish voluntary systems.

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Property Rights: Understanding Government Takings and Environmental Regulation
Nancie G. Marzulla and Roger J. Marzulla
Rockville, Md.: Government Institutes, 1997, 325 pp.

In his introduction to this book, Chief Judge Loren Smith of the United States Court of Federal Claims, himself a major force in the current renaissance in the recognition of the importance of property rights, credits Nancie and Roger Marzulla. "They approach the fundamental human right to property," he notes, "in the same spirit as did James Madison and the other framers of our Constitution—as part of the fundamental integrity and dignity of the human being."

The praise is deserved. For more than a decade, the Marzullas have been at the center of the property rights movement. Roger was the Assistant Attorney General for Land and Natural Resources during the 1980s, and was responsible for President Ronald Reagan's 1988 Executive Order 12630, "Avoiding Governmental Interference with Constitutionally Protected Property Rights." Nancie was also in the Department of Justice, but she is better known as the founder of the Defenders of Property Rights, a public interest law firm that prepares amicus briefs in Supreme Court cases, helps property owners with the detailed negotiations that characterize government regulation in this field, and backs up those efforts with trial court litigation. No two people could be better qualified to write about the sprawling, confused field of property rights.

Property Rights concentrates on law, not politics. The reader learns the state of legal play, not the machinations of the multitude of environmental and property rights defense groups that infest the area. The book starts with some introductory chapters reviewing the basics. The authors emphasize the breadth of the term "property," which includes real estate, water rights, contracts, trade secrets, pension rights, and numerous other tangible and intangible claims. All are protected by the Fifth Amendment to the Constitution, which says, "Nor shall private property be taken for public use without just compensation."

The broad definition of property makes the definition of "takings" complex. Courts have had no trouble finding a taking when the government seizes title or takes physical possession, but the more difficult question, and the one that provides most of the current conflict, involves takings by regulation. Here, the government does not seize the property,

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but simply tells the owner what he can do with it—for example, by decreeing that nothing can be built on a wetland or that habitat be maintained for endangered species. The book documents the failure of the Supreme Court to develop any coherent standard for determining when a regulatory taking has occurred. The Court still clings to the formulation made by Justice Oliver Wendell Holmes in 1922: regulation becomes taking when "it goes too far." Of course, the Court has developed several tests purporting to provide more guidance, and those are reviewed in *Property Rights*.

The Marzullas look at the takings issue in a series of specific contexts, reviewing the regulation of wetlands, the Endangered Species Act, Superfund, other environmental laws, and land use. All of those sections are short, designed to acquaint the reader with the basics, not to provide a treatise. The authors do a fine job of translating an area of great legal complexity into terms easily understood. They also use their hands-on experience to explain the practical impact of those doctrines on the people who must live with them. For example, they skillfully sketch the conflicting missions of the different agencies involved in defining protected "wetlands" and the bureaucratic imbroglios that result.

One particularly chilling story is of a Pennsylvania farmer who wanted to expand a wet spot in a hay field into a two-acre pond. He was confronted with a bureaucratic maze and unable to get approval for a project that, while important to him, would have had a trivial environmental impact. Others fared even worse and were put in jail for having used their private property without the proper ticket-punching by the regulatory agencies.

The final third of the book deals with general issues such as due process and equal protection, and discusses the status of current reform efforts in the area of property rights legislation. This part of the book also contains a valuable section on procedural issues, showing that property rights litigation is subject to some particularly knotty problems relating to the ancient legal doctrines of standing, ripeness, and jurisdiction. Many property owners find themselves out of court due to failure to master those arcana.

The authors include some interesting attachments at the end of the book. One addendum is the U.S. Attorney General's Guidelines for Implementing Executive Order 12630. This is a formal government legal memorandum, undoubtedly prepared by the Marzullas during their tenure in the Department of Justice, and is itself a first-rate primer on the law of takings. Also, the authors include the two most important Supreme Court cases of the 1990s, to bring readers up to date.

This book will help readers understand the importance of safeguarding property rights and the damage that has been done by failing to see property rights as human rights.

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Mere Creatures of the State? Education, Religion and the Courts: A View from the Courtroom
William Bentley Ball
Notre Dame, Ind.: Crisis Books, 1994, 132 pp.

In *Mere Creatures of the State*, William Bentley Ball shows a keen understanding of the impact of abstruse legal doctrines concerning religion and education on individual students and families across America. Unlike so many other commentators, however, Ball developed his understanding of those issues while playing a special role in the making of those doctrines. In fact, he has argued some of the most famous (and infamous) Supreme Court educational religious liberty cases we have, including *Lemon v. Kurtzman* (1970), *Wisconsin v. Yoder* (1972), and *Zobrest v. Catalina Foothills School District* (1993).

This book tells the stories behind those cases, giving us a "view from below," as Ball puts it, of the individuals and families whose names are immortalized in the reports of Supreme Court decisions. We learn about Ball's carefully built relationship with the Amish defendants in *Wisconsin v. Yoder*, for instance, and the struggles faced by the parents of Jim Zobrest, who wanted to use federal funds under the Education of the Handicapped Act to pay for an interpreter for their deaf son who attended a Catholic school. Ball lays out those and other emotionally trying stories in his sincere and mostly successful effort to demonstrate the need to protect religious liberty in education.

Although *Mere Creatures* is a compelling collection of Ball's personal experiences as a defender of religious liberty in the educational sphere, it is also a book about constitutional interpretation. The interpretive models Ball advocates are not new, but are parallel to the constitutional views of the bulk of "religious libertists" on the left and right. ("Religious libertists," who essentially advocate unfettered religious freedom accompanied by frequent governmental accommodation, should not be confused with the separation-of-church-and-state crowd, of which Ball is definitely not a part.) However, Ball's book provides a valuable service to the lay reader by explaining the religious libertists' narrow interpretation of the First Amendment's establishment clause ("Congress shall make no law respecting an establishment of religion") and broad reading of the free exercise clause ("or prohibiting the free exercise thereof").

Ball is at his best when he is criticizing the Court's establishment clause jurisprudence. With an informative history of Pennsylvania's extensive legislative battles over state financial assistance in various forms to private (primarily Catholic) education, he introduces the reader to the justly maligned establishment clause test set forth in *Lemon v. Kurtzman* that prohibits "excessive entanglements" between church and state. Ball's historical background helps the reader better understand the effrontery and audacity of the Supreme Court's central conclusion in *Lemon* (based, apparently, entirely on an article in the *Harvard Law Review* and not on the Constitution or its history) that even allowing *political debate* over

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public aid to parochial schools is somehow unconstitutional. Ball explains the perverse lesson of the *Lemon* rule, which allowed a Catholic college to receive government construction aid in *Tilton v. Richardson* in 1971 only because there was no evidence that anything "religious" would go on in any of the buildings constructed with government funds.

Unfortunately, Ball's clear thinking and emphasis on the historical meaning of the First Amendment in the establishment clause context finds no parallel in the case of the free exercise clause. Ball (and religious libertists generally) enthusiastically support the broad free exercise rule established in Ball's 1972 victory in *Wisconsin v. Yoder*, where the Court held that the state of Wisconsin had violated the free exercise clause by mandating that all high-school-age children, including the Amish defendants' children, attend a formally organized school. The Court faulted Wisconsin for interfering with the Amish's religious beliefs without a "compelling interest." Faced with the argument from Judge Robert Bork and others that this test gives religious people an exemption from laws to which they object, Ball simply answers that this "is, in fact, vintage left-liberal doctrine: that if government accommodates religious exercise, it thereby violates the Establishment Clause." That response, however, misses the point of the accommodation argument, which is that the legislature is free to accommodate (or not to accommodate) as it sees fit, without interference from the courts and without running afoul of the Constitution. The accommodation argument is an establishment clause argument, not a free exercise argument. When the judiciary orders accommodation under the free exercise clause, it is not "allowing" accommodation, it is mandating it, thereby creating for someone an unwarranted exemption from a generally applicable law.

Ball does not shirk from finishing the story on free exercise, at least as it existed at the time of his book's publication. He discusses *Employment Division v. Smith*, the 1991 case in which the Supreme Court all but overruled *Yoder* and held that as long as a challenged law is a neutral law of general applicability that is not used to single out people of certain religious practices, there is no constitutional problem. Not surprisingly, Ball disagrees with the *Smith* opinion, but he is shrill and unconvincing when he complains that "[i]ts virtual insouciance in overriding its own prior opinions was really a stunning repudiation of the 'judicial conservatism' which the media had attributed especially to Justice [Antonin] Scalia and Chief Justice [William] Rehnquist." Again, Ball completely misses the point of the constitutional "originalists," which is that the Constitution should be interpreted according to what it meant when it was ratified, not according to what might or might not be a good policy position on religious liberty. And the history behind the First Amendment does not even hint at anything so strict as a "compelling interest" test. Ball stresses, however, that although the religious libertists suffered a severe setback with *Smith*, they regained much lost ground through the recently overturned "Religious Freedom Restoration Act" of 1993, which attempted

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to reinstate the *Yoder* compelling interest test in free exercise cases. (The Supreme Court overruled this attempt in *City of Boerne v, Flores* [1997] on separation-of-powers grounds).

In sum, *Mere Creatures* presents an interesting puzzle. Ball's passion for religious liberty is understandable, admirable, and backed by solid reasoning, but his constitutional analysis varies considerably in quality and in adherence to the First Amendment's original meaning. But even with those weaknesses, this book provides the reader with a good picture of what is wrong with constitutional theory and educational religious liberty in the United States.

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JOURNAL OF MONEY, CREDIT, AND BANKING

Widely read and cited by researchers and policymakers, the Journal of Money, Credit, and Banking is a primary economics journal reporting major findings in the study of monetary and fiscal policy, credit markets, money and banking, portfolio management, and related subjects. Editors: Stephen G. Cecchetti and Paul D. Evans, Ohio State University.

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"Yet, although the problem of an appropriate social order is today studied from the different angles of economics, jurisprudence, political science, sociology, and ethics, the problem is one which can be approached successfully only as a whole."

Friedrich A. von Hayek

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THE WISDOM OF SIR JOHN COWPERTHWAITE

In the long run, the aggregate of decisions of individual businessmen, exercising individual judgment in a free economy, even if often mistaken, is less likely to do harm than the centralized decisions of a government, and certainly the harm is likely to be counteracted faster.

Simply put, money comes here and stays here because it can go if it wants to. Try to hedge it around with prohibitions and it would go and we could not stop it and no more would come. . . . Our only course is to ensure that the economic and political conditions here are such as to give every inducement to come and to stay.

—Sir John Cowperthwaite
Hong Kong's Financial Secretary
(1961–1971)

Quoted in Nancy DeWolf Smith, "The Wisdom That Built Hong Kong's Prosperity."
Wall Street Journal (1 July 1997): A14.

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